Investigating the differential role of cognitive and affective characteristics associated with depressive symptomatology and callous-unemotional traits in adolescents engaging in externalising and antisocial behaviours

Smith, Laura Jean

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Laura Smith

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Overview

Main Research Project

Investigating the differential role of cognitive and affective characteristics associated with depressive symptomatology and callous-unemotional traits in adolescents engaging in externalising and antisocial behaviours

Service Evaluation Project

Auditing the Cognitive Behavioural Therapy competences of a Child and Adolescent Mental Health Service Team

Main Research Project

Investigating the differential role of cognitive and affective characteristics associated with depressive symptomatology and callous-unemotional traits in adolescents engaging in externalising and antisocial behaviours

Primary Supervisor: Dr Matthew Woolgar, Consultant Clinical Psychologist, South London and Maudsley NHS Foundation Trust

Second Supervisor: Dr Troy Tranah, Lead Psychologist CAMHS CAG, South London and Maudsley NHS Foundation Trust

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1 Abstract

Adolescents engaging in externalising and antisocial behaviour form a heterogeneous group. Despite diagnostic manuals including specifiers for subtypes (i.e. Depressive Conduct Disorder in ICD-10 and Callous Unemotional Traits in DSM-V), if an adolescent reaches threshold for a Conduct Disorder diagnosis, universal interventions are typically offered which may not take into account these differences. This study investigated the potentially differentiating characteristics associated with depressive symptomatology and callous unemotional traits in a sample of adolescents engaging in externalising and antisocial behaviour. Sixty-eight adolescents participated in the study from four Pupil Referral Units (PRU's) across London. Depressive symptomatology was positively associated with rumination, low self-esteem and potentially feelings of shame, with regression analysis demonstrating that low self-esteem was the strongest predictor. Higher levels of callous unemotional traits were negatively associated with empathy, guilt, low self-esteem and potentially rumination. Regression analysis demonstrated that a lack of guilt (reparative behaviour), affective empathy and low self-esteem were the strongest predictors of callous unemotional traits. Overall low self-esteem was the strongest predictor of engagement in delinquent behaviour. The clinical implications for treatment are discussed.

2 Introduction

Antisocial children and adolescents reflect a heterogeneous group in terms of the aetiology, severity and outcomes of their behaviour. There have been many attempts to subtype individuals based on their different characteristics yet treatments for externalising behaviours have tended to be universal in approach and thus have mixed success. Holding in mind ICD-10's Depressive Conduct Disorder diagnostic category and the new DSM-V's callous unemotional specifier, the current study will be looking at the role of two features of problem behaviour, namely, depressive symptomatology and callous unemotional traits, within a sample of adolescents engaging in antisocial and disruptive behaviour[1]. Whether these two features of problem behaviour correlate with different cognitive and affective characteristics will be investigated and the clinical implications of different emotional and behavioural correlates to focus on in treatment will be discussed.

2.1 Conduct problems and antisocial behaviour

Conduct problems and antisocial behaviour are a problem for the individual, those around them and society as a whole. These externalising behaviours manifest clinically as Conduct Disorder which the ICD-10 describes as a repetitive and persistent pattern of dissocial, aggressive and defiant conduct for a minimum of 6 months. This includes behaviours such as fighting, bullying, cruelty to people or animals, destruction of property, fire setting, stealing, repeated lying, truancy, running away, severe temper tantrums and defiance/disobedience.

2.2 Prevalence and Risks

It is estimated that around 6% of children and young people in the UK have a diagnosis of Conduct Disorder and approximately 76% of parents of a child with conduct problems have sought professional advice (ONS, 2005). Conduct problems are the most common referral to child mental health services accounting for between 30 and 40% (Audit commission, 1995; Reid, 1993). The prevalence has

[1] The individuals in this study have conduct problems and externalising behaviour as evidenced through their exclusion from mainstream school and endorsement of conduct problems and antisocial behaviour on measures within the current study, however they do not necessarily have a diagnosis of Conduct Disorder.

been found to be higher in males and in lower socioeconomic status groups (Baker, 2006; ONS, 2005). Individuals with conduct problems are at greater risk of mental health comorbidities, antisocial behaviour, criminality, academic failure, substance misuse, poor interpersonal relationships, early pregnancy and employment issues (Baker, 2006). This has huge costs to both the individual and society through services such as the NHS, social services, education and the criminal justice system. Knapp, Scott and Davies (1999) reported that by 28 years old, an individual who had a Conduct Disorder diagnosis by age 10 had cost services around £100,000 more than someone without this diagnosis. In terms of offending, it is estimated that adults who had conduct problems as a child are responsible for approximately 80% of all crime in the UK (Sainsbury Centre for Mental health, 2009). It is evident that externalising behaviours and conduct problems which often clinically manifest as Conduct Disorder are common among children and adolescents and an issue for the individual and those around them.

2.3 Aetiology

There have been many developmental and causal mechanisms proposed in relation to conduct problems. Hill (2002) has suggested that a range of social, biological and psychological factors can contribute to both the development and maintenance of conduct problems and it may be a combination that create or exacerbate vulnerability. Social and psychological factors such as living in a large, low income or lone parent family, with parents with no educational qualifications or suffering from poor mental health, an individuals' poor school attendance, peer problems, comorbid emotional and substance misuse issues are all associated with poorer outcomes (ONS, 2005). Biological factors such as genetic predisposition, child's temperament, neurological and neuropsychological deficits also play a role. Moffitt (1993) suggested that low IQ, poor verbal skills and executive functioning impairments create vulnerability. Research suggests there is a genetic/environment interaction whereby a child who is genetically vulnerable and reared in a dysfunctional environment is more likely to display externalising behaviours (Dandreaux & Frick, 2009; Frick, 2006; Moffitt, 1993, 2003; Patterson & Yoerger, 1997).

2.4 Comorbidities associated with conduct problems

Conduct problems frequently co-occur with other mental disorders with approximately 35% of individuals having a diagnosis of another recognised disorder, with around half of these comorbid with an emotional disorder and half with hyperkinetic disorder (ONS, 2005). Rates of comorbidity of hyperkinetic disorder and conduct problems has been found to be as high as 90% in clinically referred samples (Abikoff & Klein, 1992) and around 36% in the community (Waschbusch, 2002). In relation to internalising disorders, Polier, Vloet, Herpertz-Dahlmann, Laurens and Hodgins (2012) found comorbidity with conduct problems was approximately 35% in a community sample and 78% in a clinical population. Furthermore, those with comorbidity demonstrated more severe externalising behaviour, evidencing a need to investigate this further to develop effective interventions. The role of anxiety with conduct problems has been debated with some arguing high levels are often present (Coid & Ullrich, 2010; Hodgins, De Brito, Chabra & Cote, 2010; Sourander et al, 2007) and others suggesting that those with conduct problems tend to have reduced levels of anxiety (Herpertz et al, 2003; Loney, Butler, Lima, Counts & Eckel, 2006; Moffitt, Caspi, Harrington & Milne, 2002).

Angold & Costello (1993) investigated the rates of comorbidity of depression with a number of other disorders. In community samples, comorbid depression in children and adolescents with conduct problems is present in between 8.5 and 45.4%. However rates of comorbid conduct problems in depression are higher (22.7% – 83.3%). Prevalence rates of depression are higher in clinical samples, but the rate of comorbidity is similar to community samples, with comorbid depression and conduct disorder ranging from 6% - 40%. Comorbid depression and conduct disorder will be discussed in more detail in section 2.5.2.

2.5 Heterogeneity and attempts to subtype individuals with conduct problems

Individuals with conduct problems are not a homogenous group. As already stated, there are many social, biological and psychological causal and maintenance factors implicated in their externalising behaviour. Developmental models have sought to

explain the different causal and maintenance factors that may account for the heterogeneity and there have been many attempts to create subtypes to account for differences in the development, severity, variety and persistence of conduct problems. Investigating these differences informs the development of more effective treatments that target factors pertinent to the individual. The current study examines individuals with conduct problems who are engaging in antisocial behaviour (and have been excluded from mainstream school) rather than using a clinical sample of individuals with a diagnosis of Conduct Disorder. However much of the literature on heterogeneity refers to more formal subtypes as stated in the diagnostic manuals for Conduct Disorder and therefore this will be used as a framework for discussion.

The Diagnostic and Statistical Manual of Mental Disorders (DSM) has over the years, changed the diagnostic categories into theoretically distinct subtypes based on specifiers such as level of aggression or whether the delinquent behaviour occurred with peers or alone. DSM-IV based the subtyping of conduct disorder into the developmental time of onset with i) childhood onset (before aged 10) and ii) adolescent onset (Lahey, Loeber & Quay, 1998). The childhood onset versus adolescent onset pathways and their differential effect on individuals' type and severity of delinquent behaviour as well as outcomes provides information on the causal mechanisms. This can inform both research and treatment. Childhood onset conduct problems has shown a strong genetic contribution and the interplay of temperament and suboptimal rearing environment is associated with more severe and persistent delinquency and poorer outcomes (Moffit, 1993, 2003). In contrast, adolescent onset conduct problems are believed to result from adolescents' rebelliousness and attempt at autonomy and independence (Moffitt, 1993, 2003).

2.5.1 DSM-V Callous Unemotional Specifier

More recently in addition to the childhood vs adolescent onset distinction, DSM-V now includes a callous-unemotional specifier within the conduct disorder diagnostic criteria to capture another subtype of children and adolescents who possess these traits. Taken from the adult literature on psychopathy and its associated interpersonal (narcissistic traits), behavioural (impulsivity) and affective (lack of

empathy) traits that have been shown to be associated with more severe and repetitive offending in adults, research began to look at these traits in children and adolescents. Specifically, the presence of callous unemotional traits under the affective rubric has been shown to be associated with more severe and aggressive antisocial behaviour in young people (Edens, Campbell & Weir, 2007; Frick & Dickens, 2006; Frick & White, 2008).

Research has shown that individuals with conduct problems and high in callous unemotional traits show different emotional, cognitive and personality characteristics and deficits to those with conduct problems alone (Frick & White, 2008). Those high in callous unemotional traits have been shown to have deficits in processing emotional stimuli, particularly in the recognition of fear and distress in others (Blair & Coles, 2000; Blair, Budhani, Colledge & Scott, 2005; Blair, Colledge, Murray & Mitchell, 2001; Dadds, El-Masry, Wimalaweera & Guastella, 2008; Munoz, 2009; Stevens, Charman & Blair 2001), diminished emotional reactivity to negative stimuli (Anastassiou-Hadjicharalambous & Warden, 2008; Blair, 1999; Loney, Frick, Clements, Ellis & Kerlin, 2003), a reward orientated response style and a lack of sensitivity to punishment (Fisher & Blair, 1998; Frick et al, 2003; Munoz Centifanti & Modecki, 2013), endorsement of positive expectancies in the use of aggression (Pardini, Lochman & Frick, 2003) and thrill seeking and fearless personality style (Barker, Oliver, Viding, Salekin & Maughan, 2011; Barry et al, 2000; Frick et al, 2003; Frick, Lilienfeld, Ellis, Loney & Silverthorn 1999; Pardini, 2006). Additionally, callous unemotional traits are highly heritable (Larsson, Viding & Plomin, 2008) and shared environment is negligible (Viding, Blair, Moffitt & Plomin, 2005). This is in contrast to those with conduct problems in the absence of callous unemotional traits where dysfunctional parenting and other environmental factors and deficits play a substantial role.

The research demonstrates an important distinction between individuals with conduct problems high or low in callous unemotional traits. These different characteristics and deficits have an impact on their antisocial behaviour. Those low on callous unemotional traits tend to be more emotionally dysregulated and highly impulsive leading to reactive aggressive in response to low provocation (Munoz,

Frick, Kimonis & Aucoin, 2008). They experience more anxiety and are affected by others' distress leading to feelings of guilt, however they still continue to engage in antisocial behaviour perhaps due to these deficits and others such as poor executive functioning and low verbal IQ (Fergusson, Lynsky & Horwood, 1996; Loney, Frick, Ellis & McCoy, 1998; Pardini et al, 2003). However those high on callous unemotional traits have been shown to engage in both reactive and proactive aggression (Frick et al, 2003; Kruh, Frick & Clements, 2005) and have positive expectancies in relation to aggression bringing about the desired goal (Pardini et al, 2003). Studies have shown these individuals to be emotionally overcontrolled with less reactivity, demonstrating lower levels of guilt, empathy, anxiety and dysregulation (see Frick and White, 2008 for a review). Stickle, Kirkpatrick & Brush (2009) suggested we need a better understanding of the affective characteristics associated with aggression and antisocial behaviour in individuals with callous unemotional traits and this will inform more effective interventions.

2.5.2 ICD-10 Depressive Conduct Disorder

ICD-10 has an independent diagnostic category of mixed disorder of emotions and conduct for individuals who meet the criteria for Conduct Disorder (F91) and one of the mood (F32) disorders. Depressive Conduct Disorder (F92) is given to those meeting criteria for Conduct Disorder with 'persistent and marked depression of mood' (WHO, 1993).

The co-morbidity of conduct problems and depression is widely recognised with studies finding high rates in both community and clinical populations (Angold & Costello, 1993; Angold, Costello & Erkanli, 1999; Greene et al, 2002; Wolff & Ollendick, 2006). Studies have disputed which comes first with Capaldi (1991,1992) arguing that conduct problems lead to affective problems through the 'dual failure model'. That is, conduct problems lead to failure in both social and academic areas and relationship problems with peers, family and teachers leading to rejection and increasing isolation which can lead to feelings of low mood and depression (Capaldi, 1991, 1992). In support of this, Nock, Kazdin, Hiripi and Kessler (2006) suggests that conduct problems precede depression in 72% of cases. In contrast, others have

argued that depression comes first and leads to conduct problems to externalise the feelings associated with low mood (Kovacs, Paulauskas, Gatsonis & Richards, 1988; Puig-Antich, 1982). However more likely is a reciprocal relationship between low mood and conduct problems where each disorder increases the risk of the presence of the other. It may be that conduct problems are more likely to bring a person into services due to the visible and troublesome nature of associated behaviours and this may overshadow depressive symptomatology.

It is clear that a high proportion of individuals engaging in externalising behaviour are also low in mood (Angold & Costello, 1993; Angold, Costello & Erkanli, 1999; Greene et al, 2002; Herpertz et al, 2003; Lewinsohn, Rohde & Seeley, 1995; Wolff & Ollendick, 2006). Investigating the characteristics of depressive symptomatology in an antisocial sample would provide more information on the processes that could be targeted in treatment.

2.6 Current treatment interventions

Traditional interventions programmes are disorder specific and often do not take into account the heterogeneity within that disorder. This could account for inconsistent treatment effects as offering a universal approach to individuals with different presentations will mean that only some aspects (or none) of the intervention are targeting factors pertinent to the individual such as the causal processes maintaining their behaviour. This approach may dilute treatment effects. Despite there being a diagnostic classification for Depressive Conduct Disorder and research to warrant an additional classification of a callous unemotional specifier, interventions tend to be universal in nature (e.g. social and cognitive problem solving programmes or 'anger management' interventions targeting the behaviours which tend to associated with conduct problems in the absence of callous unemotional traits). This does not target the cognitive and affective characteristics associated with these diagnostic subtypes.

Currently, for the treatment of conduct disorder, NICE (2013) recommend parent management training, social and cognitive problem solving programmes, multimodal interventions or medication for comorbid ADHD. Parent management

training and Multi Systemic Therapy have the most support, however the social skills and problem solving interventions are less effective (Fonagy, Target, Cottrell, Phillips & Kurtz, 2002). This may indicate that for some individuals, particularly those with more complex presentations (i.e. comorbidity), more targeted and personalised treatment programmes could be more effective as factors more pertinent to the individual and their environmental risk factors are addressed.

In the same way as cognitive and affective processes affect the presentation of an individual with a single disorder such as depression (i.e. rumination), cognitive and affective characteristics might contribute to oppositional and antisocial behaviour in adolescents. Investigating processing styles in individuals engaging in antisocial behaviour would provide evidence on different risk factors, trajectories and cognitive or affective deficits that can be addressed in treatment. Interventions could be personalised to map onto the specific deficits that an individual has which may be contributing to their antisocial behaviour. For example, a child who reacts aggressively due to sadness or irritability (depression) rather than for instrumental gains or through a lack of empathy (callous unemotional) may require a different form of intervention. Establishing a profile of the cognitive and affective characteristics associated with comorbid depression and antisocial behaviour or callous unemotional traits and antisocial behaviour will inform the development of more personalised interventions.

Different cognitive and affective risk factors, characteristics and processing styles need to be understood better to enable interventions to be tailored to the individual's presenting needs. This is important as treatment may be addressing biases or deficits that are not present or counter to what needs to be addressed. For example, in an adolescent with low mood, irritability may be a driver for their aggression and they may engage more in reactive aggression in response to provocation. This will involve different underlying processes to an adolescent high in callous unemotional traits who may be more focused on using aggression to achieve their goal and therefore engage in proactive or instrumental aggression. If an anger management programme focuses on all adolescents walking away when provoked, this may feed into poor coping in the depressed individual, and

overreliance on withdrawal rather than assertiveness. Therefore it is important to investigate the processes and drivers behind aggressive or antisocial behaviour to enable interventions to be more effective.

2.7 Subtyping based on presence of depressive symptomatology or callous unemotional traits and their associated cognitive and affective characteristics

It is evident that adolescents with conduct problems are not a homogenous group and many attempts at subtyping this group has been made. It is now widely accepted that callous unemotional traits are highly correlated with conduct problems in some adolescents, leading to the DSM-V to include an option for a callous-unemotional specifier within a conduct disorder diagnosis. Additionally there is a high rate of depressive comorbidity in adolescents with conduct problems and ICD-10 has a separate diagnostic category of Depressive Conduct. However, the treatments offered are not usually specific to the subtype of diagnosis (i.e. focusing on presence of low mood or callous unemotional traits).

There are many cognitive and affective characteristics associated with psychopathy and psychopathology and these may differ in an individual depending upon their level of callous-unemotional traits or depressive symptomatology. Some characteristics have been found to be conceptually related to either callous-unemotional traits or depressive symptomatology and research is needed to investigate whether there is a differential effect of these within a sample of adolescents with aggressive and antisocial behavioural problems. As they may be related to both, it will be important to control for the effect of one whilst looking at the relationships with the other to test whether there are independent contributions from both presentations (i.e. the relationship between self-esteem and depression whilst controlling for the effect of callous unemotional traits). This would enable interventions to be developed to target the specific characteristics of a diagnosis of conduct problems with depression or with callous unemotional traits. Individuals may present with conduct problems, depressive symptomatology and be high in callous unemotional traits therefore, screening at assessment and

tailoring the intervention to their symptoms, cognitive and affective characteristics would be necessary.

2.8 Depressive symptomatology characteristics in individuals engaging in antisocial and disruptive behaviour: Implications for treatment

It is apparent that both depression and externalising behaviours are risk factors for many social and academic sequelae. The presence of comorbidity seems to heighten this risk with increased social impairment, delinquency, suicidal ideation and overall poorer global functioning (Capaldi, 1991, 1992; Ingoldsby, Kohl, McMahon & Lengua, 2006; Lewinsohn et al, 1995). Espeleta, Domenech and Angold (2006) found that there were differences in functional impairments of those with conduct problems only, depression only or comorbidity and therefore it is important to personalise treatment to target these differences.

Wolff and Ollendick (2012) suggest that although effective treatments have been evidenced for depression and conduct problems, little is known about effective treatments for the comorbidity of these disorders. Treatments tend to only reduce the symptoms associated with the target disorder but have no effect on comorbid symptoms (Kolko, Brent, Baugher, Bridge & Birmaher, 2000; Rohde, Clarke, Mace, Jorgensen & Seeley, 2004). Wolff and Ollendick (2012) recently implemented a CBT treatment for comorbid conduct problems and depressive symptomatology and found reductions in symptoms and overall improvements in emotional regulation. However, more needs to be known about the specific cognitive and affective deficits in this comorbid group to enable more personalised and effective treatments.

Less is known about depressive symptomatology in children and adolescents with callous unemotional traits. Studies in adolescents looking at psychopathy and depression have mixed results with some finding no relationship (Brandt, Kennedy, Patrick & Curtin, 1997; Campbell, Porter & Santor, 2004), some finding a negative relationship (Amato, Cornell & Fan, 2004; Sadeh, Verona, Javdani & Olson, 2009) and others a positive relationship (Chabrol, Labeyrie, Rodgers & Levenson, 2010; O'Neill, Lidz & Heilbrun, 2003). Chabrol et al (2010) found that narcissism mediates

the relationship between callous unemotional traits and depression and therefore suggested that narcissism and callous unemotional traits may act as defences against depression.

It is important to investigate whether the characteristics often associated with depression are also present in individuals with depressive symptomatology who engage in externalising behaviours. This will inform targets for treatment in a distinct subgroup of antisocial adolescents.

2.8.1 Rumination

Rumination is a 'maladaptive form of negative valanced, self-focused, repetitive thinking about symptoms of distress and their causes, consequences and implications' (Baer & Sauer, 2011, p142). Rumination tends to involve cognitions that are intrusive and aversive and therefore the process of ruminating intensifies and maintains the negative affect (Carson & Cupach, 2000; Peled & Moretti, 2010; Sukhodolsky, Golub & Cromwell, 2001).

Most research has looked at sadness rumination which involves focusing repeatedly on thoughts around sadness and negative affect. Sadness rumination has been shown to be a risk factor in the development and maintenance of depression (Morrow & Nolen-Hoeksema, 1990). More recently studies have looked at anger rumination which is conceptualised as repetitive thinking about anger and affect related thoughts in relation to a situation that made the individual angry. This rumination contributes to the maintenance and intensification of angry affect and has been associated with aggression (Bushman, Bonacci, Pederson, Vasquez & Miller 2005; Collins & Bell, 1997; Sukhodolsky et al, 2001). Denson, Pedersen, Friese, Hahm & Roberts (2011) found angry rumination following an anger inducing provocation reduces self-control and increases the likelihood and severity of an aggressive act.

Peled and Moretti (2010) argue it is important to distinguish between the different types of rumination as they appear to have specific emotional and behavioural correlates. They found that anger rumination predicted feelings of anger, relational aggression and overt aggression. In contrast, sadness rumination predicted

depressed mood and was a negative predictor of overt aggression. They argue that ruminating on sadness may inhibit aggression due to the focus on self-blame. Pedersen et al (2011) found that provocation-focused rumination and self-focused rumination both influenced angry affect but through different processes. The former promotes a focus on anger and retaliation whilst the latter increases self-critical negative affect which may result in aggression due to feelings of shame. Bushman, Baumeister & Phillips (2001) have suggested that rumination may motivate individuals to engage in aggressive behaviour as a way to regulate their negative affect. Martin and Dahlen (2005) suggest that individuals that use rumination for emotion regulation tend to experience anger repeatedly. Anestis, Anestis, Selby & Joiner (2008) suggest that verbal and physical aggression may serve a self-regulatory function like self-harming or binge eating does for other disorders. The link to shame and emotional regulatory function seems to parallel the processes involved in borderline personality disorder. Baer and Sauer (2011) found that both depressive and anger rumination were associated with borderline features.

Anestis et al (2008) found that anger rumination significantly predicted physical and verbal aggression and hostility but not anger. Both Anderson and Bushman (2002) and Denson et al (2011) argued that by ruminating on a situation, this maintains and increases the angry cognition, affect and physiological arousal which then impairs the individuals' capacity to thoughtfully appraise the situation in a non-aggressive way. Similarly, Whitmer and Banich (2010) found that those who ruminate on anger are less able to switch attention. This reduced capacity impacts on problem solving and increases the likelihood of an aggressive response.

Rumination is often a key feature of depression and therefore could be a key process in adolescents with depressive symptomatology who engage in antisocial behaviour. The relationship between rumination and callous unemotional traits is less clear therefore investigating this characteristic within a sample of antisocial adolescents would potentially differentiate these individuals.

2.8.2 Self-esteem

Studies have found a clear link between low self-esteem and depression and it is often thought to be a defining feature of depressed mood (Abramson, Seligman & Teasdale, 1978; Beck, 1967; Kernis et al, 1998; Lewinsohn, Hoberman & Rosenbaum, 1988; Orth, Robins & Meier, 2009; Sowislo & Orth, 2013). It is debated whether low self-esteem creates vulnerability for depression or whether depression leaves a cognitive scar of low self-esteem (see Zeigler-Hill, 2011 for an overview of this model). The research on the association between self-esteem and aggression or antisocial behaviour is mixed and there is conflicting evidence on whether it is low or high self-esteem that is associated with increased aggression and antisocial behaviour (Ostrowsky, 2010). It may be that the inconsistent findings are due to the heterogeneity of the construct (global self-esteem vs different dimensions of self-esteem or self-concept) and subsequent measurement.

Studies have shown that low self-esteem is associated with increased aggression in intimate relationships (Papadakaki, Tzamalouka, Chatzifotiou & Chliaoutakis, 2009), violence in adolescents (Lochman & Dodge, 1994; Sutherland & Shepherd, 2002; Trzesniewski et al, 2006), aggression and externalizing problems (Fong, Vogel & Vogel, 2008; Walker & Bright, 2009; Webster, 2006; Donnellan, Trzesniewski, Robins, Moffitt, & Caspi, 2005).

Many argue that low self-esteem leads to aggression as individuals are trying to protect themselves from feeling inadequate or inferior or to provide themselves with an increase in feelings of power (Ostrowsky, 2010). Aggression or antisocial behaviour might serve to increase self-esteem. Carroll, Houghton, Hattie and Durkin (1999) found that young people reported deliberately engaging in aggressive and delinquent behaviours to enhance their self-esteem through peer status. However, this does not always have the desired outcome and by behaving aggressively, this can lead to social exclusion and further impact on the individual's self-esteem.

In contrast some argue that it is high self-esteem that leads to aggression. Baumeister, Smart & Boden (1996) suggest that unrealistically high self-esteem or

narcissism is associated with aggression. Similarly, Salmivalli (2001) suggested that violent individuals have 'an unrealistically favourable opinion of themselves' (p388). Proponents of this view suggest that aggression occurs when someone's narcissistic view of themselves is threatened for example when their opinion is challenged. Several studies have found support for this hypothesis with links between aggression and high self-esteem and narcissism (Baumeister et al, 1996; Baumeister, Bushman & Campbell, 2000; Bushman & Baumeister, 1998; Bushman et al, 2009; Papps & O'Carroll, 1998; Thomaes, Bushman, Stegge, & Olthof 2008).

However, these studies seem to be assuming that narcissism and high self-esteem are the same construct and the other end of the continuum from low self-esteem. Donnellan et al (2005) argues that although high self-esteem and narcissism are correlated this correlation is not strong enough for convergent validity and therefore not measuring the same underlying construct. The distinction seems to be that self-esteem is related to thinking you are a person of worth whilst narcissism is thinking you are superior to others with an inflated sense of entitlement (Rosenberg, 1965). Donnellan et al (2005) found that self-esteem and narcissism have independent effects on externalizing problems, thus demonstrating discriminant validity. Similarly, Locke (2009) found self-esteem and narcissism had opposing effects on aggression and functioned as mutual suppressors. They found that aggression related negatively to self-esteem and positively to narcissism and by removing their shared variance, this amplified their opposing effects on aggression.

Low self-esteem is often clinically associated with depression therefore it would be expected that adolescents with depressive symptomatology engaging in antisocial behaviour will have low self-esteem. The relationship between callous unemotional traits and self-esteem is less clear therefore investigating this characteristic within a sample of antisocial adolescents would potentially differentiate these individuals.

2.9 Characteristics of callous-unemotional traits in individuals engaging in antisocial and disruptive behaviour: Implications for treatment

More recently, DSM-V have added a callous unemotional specifier to further differentiate individuals with conduct problems, their behaviour severity and outcomes, particularly within the childhood onset group.

The deficits and personality styles characteristic of individuals high on callous unemotional traits appear to interfere with the normal development of the moral emotions of empathy and guilt. For example, diminished emotional reactivity and recognition of distress in others, punishment insensitivity and fearlessness leads to an absence of the anxiety and guilt that is usually a conditioned response to certain events, distress or sanctions. This lack of anxiety, guilt and empathic concern disrupts the normal process of socialisation, conscience development and internalisation of parental and societal norms for prosocial behaviour (Fowles & Kochanska, 2000).

The research suggests that there are different causal and maintenance factors differentially associated with childhood versus adolescent onset conduct problems and the former can be further divided into those with and without callous unemotional traits (see Frick, Ray, Thornton & Kahn, 2014 and Frick & Viding, 2009 for a comprehensive review). As there are different risk factors and deficits associated with these subtypes, individuals are likely to respond differently to universal treatments and therefore individualised interventions could be more effective. Haas et al (2011) found that the presence of callous unemotional traits was negatively associated with 9 out of 14 goals for treatment. However, whilst these individuals may be more difficult to treat, they can make positive gains in intensive treatments or in response to some components of interventions (Caldwell, Skeem, Salekin & Van Rybroek, 2006; Hawes & Dadds, 2005; Kolko and Pardini, 2010; Waller, Gardner & Hyde, 2013). In a recent review, Waller et al (2013) found that the presence of callous unemotional traits does not reduce the efficacy of interventions but outcomes need to be measured in a way that does not confound the results. For example, using change scores as an outcome for treatment to control for starting levels of callous unemotional traits. This review

challenges the view that callous unemotional traits are not amenable to treatment and emphasise that personalised or flexible treatments benefit these individuals.

Hawes and Dadds (2005) found those with and without callous unemotional traits responded equally as well to the first part of their parent management programme which focused on reward but only those without callous unemotional traits responded well to the second part with involved punishment and sanctions. This fits with the reward sensitive and punishment insensitive characteristics of this group. Frick and Dickens (2006) suggest different interventions depending on subtype. For example, focusing on identity or mentoring to increase exposure to prosocial peers and structured activities would be effective for adolescent onset. Parent management training, emotional regulation and social or problem solving programmes would benefit those with childhood onset without callous unemotional traits. For those with callous unemotional traits, early interventions could help parents to foster empathic concern and later interventions could utilise reward oriented response style.

It is important to investigate whether the characteristics associated with callous unemotional traits differentiate individuals who engage in externalising behaviours from those low on these traits or with comorbid conduct problems and depressive symptomatology. This will inform targets for treatment in a distinct subgroup of antisocial adolescents.

2.9.1 Empathy

Cohen and Strayer (1996) defined empathy as 'the understanding and sharing in another's emotional state or context' (p988). Empathy is often conceptualised as having two components; affective empathy is described as an emotional response consistent with another's feelings and cognitive empathy as recognising and understanding another's emotions (Bryant, 1982; Cohen & Strayer, 1996; Hogan, 1969). Empathy is important in the development of prosocial behaviour and morality as the negative arousal paired with transgressions or others' distress inhibits antisocial or aggressive behaviour as the individual shares the discomfort of others. Temperamental deficits in emotional reactivity may impede development of

guilt and empathy which can result in callous unemotional traits (Frick & White, 2008). Deficits in empathy have been associated with the development of hostile, aggressive and antisocial behaviour (Feshbach, 1997; Joliffe & Farrington, 2004; Lovett & Sheffield, 2007). In the absence of empathy, individuals are at risk of failing to recognise or respond appropriately to others' distress. This may make them less inhibited and more likely to continue their aggressive or antisocial behaviour.

Psychopathy in adults has long been associated with deficits in empathy. Frick et al (2003) found that callous unemotional traits were characterised by an 'absence of guilt, constricted display of emotion, failure to show empathy and use of others for one's own gain' (p247). Studies have consistently found a negative association between presence of callous unemotional traits and empathy (Dadds et al, 2009; Munoz, Qualter & Padgett, 2010; Pardini, Lochman & Frick, 2003). This is believed to be linked to emotional processing deficits in individuals with callous unemotional traits whereby their lower emotional reactivity to negative stimuli is associated with a lack of affective empathy. However, it is unclear which deficit precedes the other (i.e. does a lack of empathy cause low emotional reactively or does low emotional reactivity affect empathy development). It is affective empathy rather than cognitive empathy deficits which have been shown to be more stable in this group of individuals with both deficits found in younger children but cognitive empathy deficits less likely to be present with age (Dadds, El-Masry, Wimalaweera & Guastella, 2008; Dadds et al, 2009; Jones, Happe, Gilbert, Burnett & Viding, 2010; Loney, Frick, Clements, Ellis & Kerlin, 2003).

Research has shown the link between callous unemotional traits and empathy but less is known about empathy in adolescents with depressive symptomatology engaging in antisocial behaviour.

2.9.2 Emotional recognition

Being able to competently identify and interpret others' emotions is integral for social interaction. This non-verbal behaviour is crucial in conveying information.

Deficits in emotional recognition can be problematic and has been linked to lack of empathy and interpersonal difficulties.

Emotional processing has been extensively researched, particularly in relation to psychopathy in adults and callous unemotional traits in children and adolescents. In relation to emotional reactivity, studies have shown that this population have a reduced startle reflex (Lykken, 1957; Patrick, 1994), skin conductance (Aniskiewicz, 1979; Blair, 1999) and heart rate (Anastassiou-Hadjicharalambous & Warden, 2008) to negative stimuli. Those high in callous unemotional traits also show reduced attention to distressing content on a dot probe task (Kimonis, Frick, Fazekas & Loney, 2006) and slower response rates to negative words on a lexical decision paradigm (Loney, Frick, Clements, Ellis & Kerlin, 2003). In relation to emotional recognition, individuals high in callous unemotional traits have shown deficits in the identification of sadness and fearful facial expressions (Dadds et al, 2006), sad and fearful vocal tones (Blair, 1995; Blair & Coles, 2000; Blair et al, 2001; Blair et al, 2005; Stevens et al, 2001) and fearful body postures (Munoz, 2009). Blair et al (2001) manipulated the intensity of emotions before children with psychopathic tendencies could correctly identify the expression. They found they needed significantly greater intensity of emotion before they could recognise sadness and they were still more likely to mistaken fearful expressions for another even when it was presented at full intensity. Marsh and Blair (2008) did a meta-analysis of 20 studies and concluded there was a consistent and robust association between antisocial behaviour and impaired recognition of fearful affect.

Overall the research shows an association between the presence of callous unemotional traits and decreased emotional recognition and reactivity. It seems that this is an important way to distinguish between different subgroups of adolescents with conduct problems as those with conduct problems in the absence of callous unemotional traits have been shown to be emotionally over-reactive.

These deficits in emotional processing and in particular recognition of fearful facial expressions are similar to the deficits shown in individuals with amygdala damage (Adolphs & Tranel, 1999). This has led to research investigating the neurological

basis of these deficits in individuals high on callous unemotional traits. Research has found amygdala hyporeactivity in response to fearful faces in individuals with conduct problems that are high on callous unemotional traits (Blair, Peschardt, Budhani, Mitchell & Pine, 2006; Jones, Laurens, Herba, Barker & Viding, 2009; Marsh et al, 2008). This is contrast to hyperactivity in those with conduct problems and low in callous unemotional traits (Viding et al, 2012). This is further support for distinguishing between individuals high or low on callous unemotional traits.

There is less research into emotional recognition in individuals with depression, especially in children and adolescents or comorbidity with conduct problems. It seems that rather than showing a deficit for specific emotions, those with depression show evidence of a negative bias in identifying facial expressions (Geerts & Bouhuys, 1998; Hale, 1998; Karparova, Kersting & Suslow 2005; Levkovitz, Lamy, Ternochiano, Treves & Fennig, 2003). In comparison to healthy controls, individuals with depression have been found to rate happy, neutral or ambiguous facial expressions as sadder or less happy (Bourke, Douglas & Porter, 2010; Nandi, Saha, Bhattacharya, & Mandal, 1982; Gur et al, 1992). Schepman, Taylor, Collishaw, & Fombonne (2012) was the first study to look at facial affect processing in children with depression and conduct disorder. They found results similar to the depressed adults. There was no specific emotion deficit but a negative bias in relation to low intensity emotions. Additionally, there was no difference between those with depression only and those comorbid with conduct problems. Most studies have looked predominately at sad, happy and neutral faces. Those that have looked at processing fearful affect in those with depression have found either no difference to controls or increased recognition rates (Bhagwager, Cowen, Goodwin & Harmer, 2004; Kan, Mimura, Kamijima & Kawamura, 2004; Le Masurier, Cowen & Harmer, 2007).

Individuals with callous unemotional traits have showed poorer recognition of fearful and sad faces and individuals with depression have shown either no difference to controls or increased recognition rates of fearful and sad faces. A deficit in processing of these emotions could differentiate a group of antisocial adolescents dependent on the presence of callous unemotional traits or depressive

symptomatology and therefore potentially be a focus of treatment for conduct problems based on these traits.

2.10 Bridging the groups: Guilt and Shame: Implications for treatment

Guilt and shame are 'self-conscious' emotions evoked by feelings of failure or transgressions. Much of the research into these emotions has failed to clearly discriminate between the two and they are often used interchangeably leading to inconsistent findings. They both involve negative affect; however the focus, level of discomfort and action tendencies is distinct. One definition is Lewis (1971) who distinguished between these emotions based on the focus. In shame, the individual focuses on the self and feels '***I*** did that terrible thing'. As the negative affect is focused inward and seen to be a reflection of their defective self, this can be an extremely painful experience. With shame comes a feeling of inferiority, powerlessness, worthlessness and almost public exposure which motivates the individual to escape from those feelings.

In guilt the individual focuses on the behaviour and feels 'I ***did*** that terrible ***thing***'. The negative affect is focused outwardly on the transgression rather than the self, resulting in an uncomfortable rather than painful experience. With guilt, often comes the feeling of remorse and the motivation to alleviate the uncomfortable feelings with an outward focus such as reparative action rather than to dwell on the self-focused pain as in shame. This distinction has received the most empirical support (see Tangney & Dearing, 2002; Tangney, Stuewig & Mashek, 2007; Tracy & Robins, 2006 for reviews).

2.10.1 Relation to aggression

Although they are often thought of as 'moral emotions' and believed to inhibit socially undesirable or immoral behaviours, research has not always found this to be the case (Maddux & Tangney, 2010). Guilt can have an adaptive function as it is associated with empathy and the motivation to engage in reparative action. Shame's adaptive function is less clear. Lewis (1971) found a link between shame and anger or as he termed it 'humiliated fury'. Shame proneness is associated with anger and hostility in contrast to shame free guilt which is negatively related to

anger and hostility (Tangney, 1995; Tangney, Wagner, Hill-Barlow, Marshall & Gramzow, 1996; Tangney, Wagner & Gramzow, 1992). Thomaes et al (2008) found that shame was associated with aggression and this was particularly high in narcissistic individuals. Aggression is used as a face saving strategy to give the individual back some power and respect that the feeling of shame has threatened (Farmer & Andrews, 2009; Tangney & Dearing, 2002). Additionally, shame prone individuals use aggression and anger to regulate their emotions when under the threat of shame (Covert, Tangney, Maddux & Heleno, 2003; Farmer & Andrews, 2009).

In contrast, propensity towards feeling guilt has been shown to be a protective factor to criminal behaviour including aggression (Tangney, Stuewig, Mashek & Hastings, 2011). Studies have found that whilst there is no relation to shame, guilt negatively predicts delinquency, antisocial attitudes and recidivism (Hosser, Windzio & Greve, 2008; Robinson, Roberts, Strayer & Koopman, 2007; Stuewig & McCloskey, 2005; Tangney & Dearing, 2002). This relationship may be due to guilt generally being accompanied by other-orientated empathy where as people who experience shame tend to exhibit less empathy and therefore more aggression (Stuewig, Tangney, Heigel, Harty & McCloskey, 2010; Tangney et al, 1996).

2.10.2 Relation to psychopathy

Despite, empathy deficits and postulated lack of guilt, there has been inconsistent findings of the role of shame and guilt in psychopathy. Children and adolescents with callous unemotional traits have demonstrated a lack of guilt (Frick et al, 2003; Lotze, Ravindran & Myers, 2010). Similarly Frick and White (2008) concluded that individuals with callous unemotional traits have 'a reduced level of distress over the consequences of their behaviour' (p8). In contrast, Gudjonsson and Roberts (1983) found significantly high levels of guilt in psychopaths. They suggested that the reason this high level of guilt did not inhibit their inappropriate behaviour was because the continual negative affect may be part of their poor self-concept rather than in relation to the specific transgression. This sounds similar to the concept of shame and it may be that the measure did not distinguish between the two emotions. In relation to shame, Cleckley (1964) suggested that a psychopath 'shows

almost no sense of shame' (p372). However, in contrast, Morrison and Gilbert (2001) found high levels of shame in psychopaths. Therefore, this study will be an opportunity to clarify some of this confusion about the roles of guilt and shame in adolescents and attempt to disentangle the associated effects of depressive symptomatology and callous unemotional traits.

2.10.3 Relation to psychopathology

Studies have shown that shame is associated with psychopathology such as depression, anxiety, anger, low self-esteem, substance misuse and eating disorders (Kaufman, 1992; Kohut, 1985; Lewis, 1971, 1987; Piers & Singer, 1971; Tangney et al, 1996; Tangney et al, 2011; Woien, Ernst, Patock-Peckhan & Nagoshi, 2003). Kim, Thibodeau and Jorgensen (2011) found in their meta-analysis of 108 studies that shame was significantly associated with depression and suggested the phenomenology of these two affective states were similar with both involving feelings of worthlessness and helplessness. Similarly in terms of attributions, shame and depressive symptomatology both involve internal, global and stable attributions (Abramson, Seligman & Teasdale, 1978). The difference in phenomenological experience between shame and guilt may explain why there are weaker associations between guilt and psychopathology.

Several studies using the Test of Self Conscious Affect (TOSCA-A) with adolescents have found that whilst controlling for guilt, shame is positively associated with psychopathology (i.e. depression, anxiety and OCD), externalisation of blame and unrelated to other orientated empathy. In contrast, whilst controlling for shame, guilt is a more adaptive response being positively associated with empathy, reparative action and unrelated to psychopathology (see Tangney et al, 1995 for a review).

As the evidence for guilt and shame in both individuals with callous unemotional traits and depressive symptomatology is mixed, it is important to investigate if these processes differentiate these individuals to be a characteristic to focus on within treatment. It would appear that neither of these constructs currently feature

in treatment packages for externalising behaviour, however they may play an important role and therefore this is important to investigate.

3 Aims and Objectives

- To determine whether depressive symptomatology and callous-unemotional traits have differential effects on cognitive and affective processing in adolescents engaging in antisocial behaviour

    - To investigate the role of low mood in a population of adolescents engaging in antisocial behaviour and how depressive symptomatology affects self-esteem and rumination.

    - To investigate the role of callous unemotional traits in a population of adolescents engaging in antisocial behaviour and how these traits affect empathy and emotional recognition.

    - To investigate whether low mood and callous unemotional traits in a population of adolescents engaging in antisocial behaviour are associated with feelings of guilt and shame.

- To provide information on the cognitive and affective characteristics found in a heterogeneous group of adolescents engaging in antisocial behaviour. This information will contribute to developing interventions that are more personalised to subgroups of those with conduct problems by directly addressing these characteristics.

The Key Hypotheses in the current study are;

1)

a) Depressive symptomatology will be positively associated with guilt, shame and rumination whilst being negatively associated with self-esteem and this will still be evident when controlling for callous unemotional traits.

b) Callous unemotional traits will be positively associated with self-esteem and negatively associated with guilt, and this will still be evident when controlling for depressive symptomatology.

   i) Furthermore, any association between callous unemotional traits and shame and rumination will be accounted for by depressive symptomatology.

2)

a) Callous unemotional traits will be negatively associated with empathy and the number of fear and sad faces correctly identified and this will still be evident when controlling for depressive symptomatology.

b) Depressive symptomatology will be positively correlated with the number of sad and fearful faces correctly identified even after controlling for callous unemotional traits, but there will be no association with empathy.

4 Method and Design

4.1 Ethics

This research was approved by the Psychiatry, Nursing and Midwifery Research Ethics Subcommittee of King's College London on 18th April 2012 (Reference Number: PNM/11/12-87). This provided full approval to recruit from Pupil Referral Units, Schools and Secure training centres and conduct the research outlined in this paper (see Appendix A). All data was stored securely and participants were allocated an ID number to ensure information remained unidentifiable.

4.2 Participants

Adolescents attending Pupil Referral Units (PRU's) in London as a result of mainstream school exclusion were invited to participate. All adolescents referred to a PRU and who were fluent in English met the selection criteria. Adolescents were not recruited according to a Conduct Disorder diagnosis. However, the degree of behavioural problems as measured by the delinquency scale and the conduct problems subscale of the Strengths and Difficulties Questionnaire (SDQ) was assessed. No predictions were made regarding the effects of gender upon dimensional traits: therefore a stipulated ratio of male to female participants was not necessary, and a likely bias of male to female participants given the demographics of pupil referral units was not expected to be problematic. No further selection criteria (either for inclusion or exclusion) were stipulated.

4.3 Recruitment procedure

All PRU's in the 32 London boroughs were sent a letter and information sheet explaining the research and inviting them to participate (see Appendix B and C). This letter was followed up by a phone call and then a meeting to discuss the research in more detail. The PRU's that agreed to participate were sent materials to give to the students. This included a parent information sheet and consent form and an adolescent information sheet (see Appendix D, E and F). Students who had parent consent were invited to participate in the research.

4.4 Measures

A copy of the questionnaires can be found in Appendix H and I.

4.4.1 Demographic Variables

This section requested information on demographic information; age, gender, sex and ethnicity.

4.4.2 Antisocial behaviour/delinquency

This is a 16 item self-report measure of delinquency originally developed for use in the Edinburgh Study of Youth Transitions and Crime, a longitudinal study of British adolescents (ESYTC: Smith & McVie, 2003). Some items were removed as they were not relevant to the aims of the current study (i.e. substance misuse questions). Items are descriptions of delinquent behaviours in relation to frequency in the preceding 12 months and adolescents rate their response on a 5 point scale of never, 1-3 times a year, 4-6 times a year, once per month, or more than once per month. Both variety and volume of delinquency can be computed.

4.4.3 Strengths and Difficulties Questionnaire (SDQ; Goodman, 1997).

This is a 25 item behavioural questionnaire which assesses the presence of significant emotional and behavioural problems. It has five subscales; emotional symptoms, conduct problems, hyperactivity/inattention, peer problems, prosocial behaviour and a total difficulties score. Respondents are asked to read each statement and rate how well it describes them on a scale of 0 'Not true' to 2 'Certainly true'. Subscale scores range from 0-10 and a total difficulties score from 0-40 (as prosocial behaviour is not included). Scores can be classified as normal, borderline or abnormal with the latter indicating a possible mental health disorder. This measure has good validity and reliability with a Cronbach's alpha of .73 (Goodman, 1998, 2001).

4.4.4 Antisocial Process Screening Device (APSD; Frick & Hare, 2001)

This is a 20 item self-report measure of psychopathic traits. It has three subscales; Callous/Unemotional, Impulsivity and Narcissism. Respondents are asked to read each statement and rate how well it describes them on a scale of 0 'Not at all true' to 2 'Definitely True'. Items are summed to create subscale and a total score. It has

been shown to have good construct validity (Vitacco, Rogers & Neumann, 2003) and adequate test-retest reliability (McBurnett, Tamm, Nowell, Pfiffner & Frick, 1994) and adequate internal consistency (Cronbach's alpha = .71; Kimonis et al, 2008). As the Inventory of Callous Unemotional Traits (ICU) is a more comprehensive measure of Callous Unemotional traits, only the narcissism and impulsivity subscales of this measure will be used.

4.4.5 Inventory of Callous Unemotional Traits (ICU; Frick, 2004)

This is a 24 item questionnaire designed to measure callous and unemotional traits in adolescents. It consists of three subscales: Callousness, Uncaring, and Unemotional. Respondents are asked to read the statements and rate how much it describes them on a scale of 0 'not at all true' to 3 'definitely true'. Items are summed to create individual subscale scores and total scores range from 0-72. It has been shown to have good internal consistency with a Cronbach's alpha ranging between .77 and .88 (Essau, Sasagawa, &Frick, 2006; Jones, Happe, Gilbert, Burnett & Viding, 2010; Roose, Bijttebier, Decoene, Claes & Frick, 2010; Viding, Simmonds, Petrides, & Frederickson, 2009) and good construct validity in clinical and non-clinical populations (Essau et al., 2006; Kimonis et al., 2008; Viding et al., 2009).

4.4.6 Basic Empathy Scale (BES; Jolliffe & Farrington, 2005)

This is a 20 item measure looking at the two components of empathic responsiveness; affective and cognitive empathy. Respondents are asked to rate their response on a 5 point scale of 1 'strongly disagree' to 5 'strongly agree'. Affective empathy and cognitive empathy subscales and a total empathy score can be computed with higher scores indicating higher rates of empathy. This measure has demonstrated good internal consistency with Cronbach's alphas of .85 for the affective scale, .79 for the cognitive scale and .87 for the total empathy score (Jolliffe & Farrington, 2007).

4.4.7 Short Mood and Feelings Questionnaire (SMFQ; Angold et al, 1995).

The SMFQ is a brief and reliable measure of depression in children and adolescents and has been adapted from the Mood and Feelings Questionnaire longer 33 item version (Angold & Costello, 1987). It consists of 13 items measuring both cognitive

and affective symptoms of depression. Respondents are asked to read the statements and rate how they have been feeling or acting in the preceding 2 weeks on a scale of 0 'not true' to 2 'true'. Items are summed to create a total score ranging from 0-26 and a cut off of 8 indicates the adolescent is at risk of depression. This measure has demonstrated good discriminate validity and good internal reliability with a Cronbach's alpha of .85 (Angold et al 1995).

4.4.8 Rosenberg Self Esteem Scale (RSE; Rosenberg, 1965)

This is a 10 item questionnaire measuring global self-esteem. Respondents are asked to rate to what extent they agree with a statement on a scale of 1 'Strongly agree' to 4 'Strongly disagree'. The positively worded items are reverse scored and all items are summed. Scores range from 10-40 with higher scores indicating higher self-esteem. The RSE has been shown to be a valid and reliable measure of self-esteem with a Cronbach's alpha of between 0.72 and 0.90 (Gray-Little, Williams & Hancock, 1997; Robins, Hendin & Trzesniewski, 2001).

4.4.9 Sadness and Anger Rumination Inventory (SARI; Peled & Moretti, 2007).

This is a 22 item measure with 11 items measuring rumination on anger and 11 items measuring rumination on sadness, using analogous items for the two forms of rumination. The words *angry* and *anger* in the anger rumination measure replaced with *sad* and *sadness* in the sadness rumination measure. This measure adopted items from Conway, Csank, Holn & Blake's (2000) Rumination on Sadness Scale (RSS) and Sukhodolsky et al.'s (2001) Anger Rumination Scale (ARS) which both have good validity and reliability. Respondents indicate how often they engage in activities described by each item when they are angry or sad on a scale of 1 'Never' to 5 'Always'. Items are summed and each scale total score can range from 11-55, with higher scores indicating increased rumination.

4.4.10 British Picture Vocabulary Scale (BPVS)

BPVS assesses adolescents' receptive vocabulary: for each question the assessor says a word and the adolescent responds by selecting the picture (from four options) that best illustrates the word's meaning. The questions broadly sample

words that represent a range of content areas such as actions, animals, toys and emotions and parts of speech such as nouns, verbs or attributes, across all levels of difficulty. This will be used to control for verbal IQ in the regression analysis.

4.4.11 The Facial Expressions of Emotion: Stimuli and Tests (FEEST; Young, Perrett, Calder, Sprengelmeyer & Ekman, 2002).

The FEEST is a computer programme designed to assess an individual's ability to recognise Ekman's 6 basic emotions of sadness, fear, happiness, disgust, surprise and anger from the range of Ekman and Friesen (1976) 'JJ' photographs. The Emotion Hexagon Test was used which places emotions on a Hexagon with those emotions more easily confused being placed adjacent to each other (see figure 1).

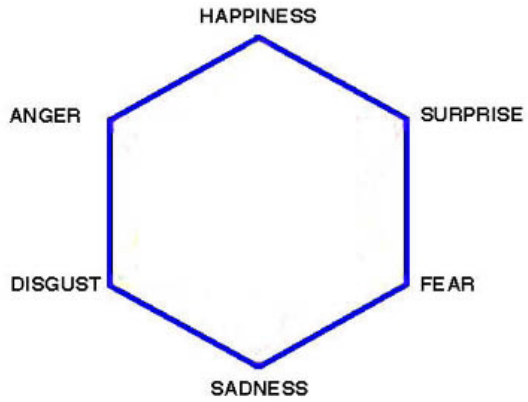

Figure 1: The Emotion Hexagon (taken from Young et al, 2002)

Five morphed faces were then created for each of the six continua that make up the hexagon with varying intensity of emotion. For example, for the fear-sadness continua, the morphed images would be displayed as 90:10 (i.e. 90% fear: 10% sadness), 70:30 (i.e. 70% fear: 30% sadness), 50:50 (i.e. 50% fear: 50% sadness), 30:70 (i.e. 30% fear: 70% sadness), 10:90 (i.e. 10% fear: 90% sadness). See figure 2 or Calder, Young, Rowland, Perrett, Hodges & Etcoff (1996) for more details.

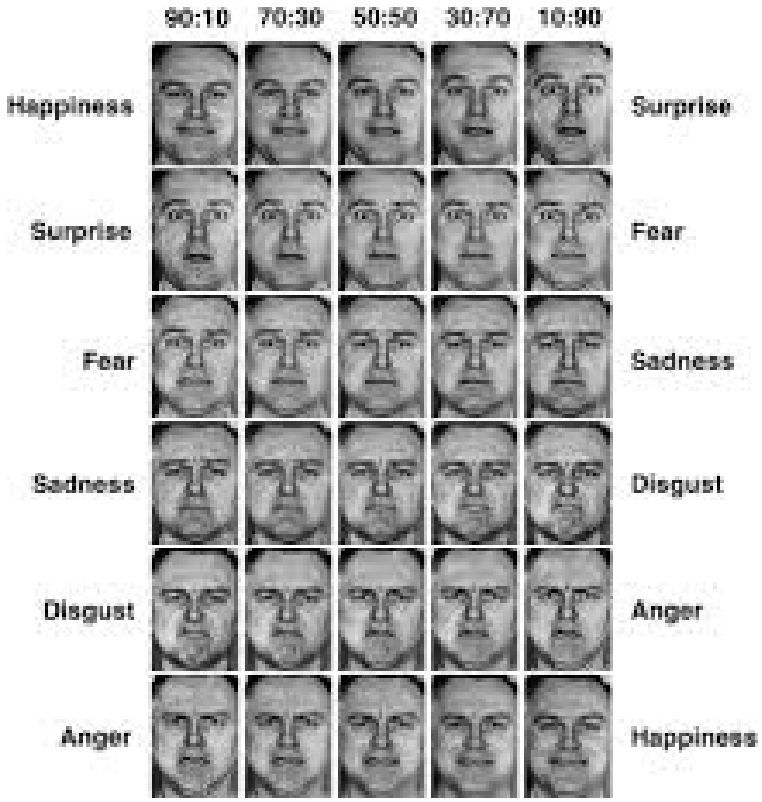

Figure 2: Expression continua used in the Emotion Hexagon Test (Adapted from Young et al, 2002).

There is a practice set of 30 morphed facial expressions followed by five sets of 30 morphed facial expressions. Each face is presented for 3 seconds and there is a 4-6 second interval between presentations. Participants are asked to select which emotion is being displayed from a list of the six emotions being assessed. Responses are scored as correct if the dominant blend is identified. On each emotion, scores range from 0-20 with a total facial expression recognition score ranging from 0-120.

4.4.12 Test of Self-Conscious Affect for Special Populations (TOSCA-SP; Tangney, Stuewig, Krishnan, Youman, Appel, Roop & Durbin, 2008).

This is a 15 item measure based on the TOSCA-SP. After discussions with the author, the wording on some items was changed so it was more relevant to an adolescent population (e.g. from driving a 'car' to 'bike', from late picking up your 'child' to 'sibling') as this measure was felt to be more relevant to an antisocial

population than the original adolescent version. Participants are asked to imagine themselves in a scenario and then read the five statements and rate how likely they would be to engage in the different responses from 1 'not likely' to 5 'very likely'. Each statement corresponds to one of the five measures of; guilt (affect and cognition), guilt (reparative behaviour), shame (negative self-appraisal), shame (avoidance) and externalisation of blame. Each subscale is totalled and scores range from 15-60, with higher scores indicating higher endorsement of the construct being measured.

4.5 Testing Procedure

All testing took place on school premises during school time. Those adolescents who had parental consent and wanted to participate were invited to take part in the research.

4.5.1 Stage 1

The contact teacher arranged adolescents into groups to complete the first phase of testing. This stage required adolescents to complete a questionnaire which took approximately 30 minutes. Before beginning the questionnaire, participants were given an information sheet and consent form (see appendix E and G) and the study was explained to them. It was made clear that participation was voluntary and they could withdraw their consent at any time.

4.5.2 Stage 2

Adolescents who completed the questionnaire were invited back for an individual testing session which took approximately one hour. In this session participants were asked to sign another consent form, consenting to this second stage of the study. Participants were asked to complete the TOSCA questionnaire, the FEEST computer task and the BPVS.

At the end of their participation, adolescents received a £10 voucher for a high street shops to thank them for their participation.

A flowchart can be found in Appendix J outlining the recruitment and testing procedure.

4.6 Power Analysis and Recruitment Feasibility

Power calculations were conducted in nQuery advisor, using regression modelling, an alpha of .05 and a power of 80%. The hypothesis tested was that the effect under question (e.g., depressive symptomatology on rumination) would still predict the outcome variable after controlling for the other variable (e.g., level of callous unemotional traits) – equivalent to a partial correlation. Although the level of control variables in the discussion below suggest that they will be relatively small, even negligible, in one study (O'Connor, Berry, Weiss & Gilbert, 2002) the correlation was found to be r=.35. This appears to be an outlier, but to be conservative a control correlation of r=.35 was used in the relevant power calculation (empathy distress), representing an initial R-square of .125. In the remainder of the power calculations a conservative level of r=.14 was used representing an initial R-square of 0.02.

The data for callous unemotional traits biases with fear and sadness are approximately r=-.40. For depressive symptomatology in adolescents, there is no data available, but the prediction would be that any effect would be in the opposite direction, suggesting an effect size of r=.40. Power calculations indicate a sample size of 50 would be sufficient to detect this with a confounding effect size for mood of r=.14. There is a similar picture for the effect sizes for callous unemotional traits and depressive symptomatology with empathy (Kimonis et al, 2008 and O'Connor et al, 2002, respectively), suggesting a sample size of 50 would be adequate to detect effects controlling for depressive symptomatology.

The data for rumination and self-esteem also show moderate effect sizes for depressive symptomatology (Burnette, Davis, Green, Worthington & Bradfield. 2009; Auerbach et al, 2010) and either negligible effect sizes (Barry, Frick & Killian, 2003) or no data and no strong hypotheses for callous unemotional traits. A sample size of 30 will be adequate to detect a median effect of r=.50 for depressive symptomatology controlling for r=.14 for callous unemotional traits.

Overall, to detect the smallest effect, with a conservative level of control covariates, a sample size of 50 would be needed. This would be more than adequate to detect the hypotheses for emotional processing, empathy, rumination and self-esteem.

4.7 Planned Statistical analysis

All statistical analysis used SPSS for Windows (Version 20.0). Correlational analysis was implemented to investigate the relationship between the main variables of interest. Once transformations were complete, Pearson's correlations were used to calculate both zero order and partial correlations between depressive symptomatology or callous unemotional traits and the cognitive and affective characteristics they were hypothesised to have an association with (whilst controlling for the other in the partial analysis). Multiple regression analysis was implemented to investigate whether the cognitive and affective characteristics found to be associated with depressive symptomatology or callous unemotional traits predicted this relationship.

5 Results

5.1 Participant Characteristics

5.1.1 Demographics

The overall sample consisted of 68 participants, ranging in age from 11-16 with a mean of 14.44 (*SD* = 1.01). 85% (58/68) completed all measures (both stages). Independent sample t-tests revealed no significant differences between those that completed both stages or the first stage only on demographics or any of the main study variables. In terms of gender, chi squared analysis revealed no significant differences between those that did only one part and those that returned for the second stage (see table 1 in appendix I). As expected, the PRUs had a male dominance with 66.2% of the sample male and participants were from a range of ethnicities (45.6% white; 44.4% other ethnicity– see table 2 in appendix I for a full breakdown). Standardised scores on the BPVS for verbal IQ ranged from 40 to 120 with a mean of 81.11 (see table 3 for demographic information and 4 for descriptives in appendix I).

5.1.2 Conduct problems and antisocial behaviour

The mean score on the conduct subscale of the SDQ was 4.43 (*SD* = 1.97) compared to the normative score of 2.2 (*SD* = 1.7), indicating a significant level of conduct problems. Only 29.4% of the sample fell in the 'normal' range, 22.1% were borderline and 48.5% in the abnormal range. On average, the sample had engaged in 13.9 different delinquent acts in the last year and 4.29 behaviours included in the DSM criteria for conduct disorder (3 behaviours out of 12 are required for a diagnosis). Based on the DSM criteria, 73.5% would reach the threshold for a diagnosis of conduct disorder. The DSM criteria group behaviours into 4 subcategories and this is how the antisocial characteristics of the sample will be presented.

5.1.2.1 Aggression to people or animals

In relation to bullying, 94% have been involved in bullying others in the last year and 38.8% of these have said they have got other people to engage in the bullying

behaviour with them. 16.2% reported stealing using confrontation such as force, threats or a weapon and 23.5% reported using a weapon in a fight. Fighting was reported by 73.5% and being cruel to animals was reported by 7.4%.

5.1.2.2 Property destruction

There was 26.5% who reported engaging in graffiti, with 22.2% reporting they have done this on more than 10 occasions. 33.8% reported damaging or destroying property on purpose and 22.1% had set fire to something deliberately, with 20% of these setting fires to property on more than 10 occasions.

5.1.2.3 Deceptiveness or theft

In relation to stealing, 57.8% reported to stealing something from home (31.7%), school (5.5%) or a shop (46.7%). Breaking and entering was reported by 13.2% of participants and of these, 7.4% said they broke into a car and 7.4% said they broke into a house with 8.8% reporting to have ridden in a stolen vehicle.

5.1.2.4 Serious rule violation

In relation to truancy, 56.7% have truanted from school in the last year with 34.2% of these truanting more than 10 times. The majority (68.6%) only truant for up to 2 days, however, 22.9% have truanted for over a week in duration. The other behaviour described as a serious rule violation is running away. In the last year, 25.8% reported running away from home for at least one night, with the majority (88.2%) coming home after 1 -2 days.

5.1.2.5 Other behaviours not included in the DSM criteria

The measure of delinquency also asked questions about behaviour at home and at school. In relation to behaviour at school in the last year, 80.9% have arrived late, 34.3% have had a fight whilst at school, 66.2% have refused to do classwork, 88.2% were cheeky to a teacher, 80.9% used offensive language, 71.6% wandered around school during class time, 16.2% have threatened a teacher, 2.9% have hit or kicked a teacher, 19.1% have cheated on school work and 27.9% have damaged or destroyed property belonging to the school.

In relation to behaviour at home in the last year, 59.7% have yelled or screamed at their mother with 9% hitting their mother and 33.8% have yelled or screamed at their father with 9.5% having hit their father. 75.8% have returned home later than there were allowed and 40.3% have stayed out overnight without permission.

5.1.3 Callous unemotional traits

The mean scores on the ICU were 31.59 (*SD* = 8.58) for total score, 8.71 (*SD* = 3.20) on the unemotional subscale, 10.09 (SD = 4.58) on the callous subscale and 12.79 (*SD* = 4.15) on the uncaring subscale. The main hypotheses used correlation analyses and therefore callous unemotional traits were treated as a continuous measure to investigate if being higher in these traits was associated with particular behaviours or deficits (see section 1.4).

5.1.4 Depressive symptomatology

Participants scores on the short version of the MFQ ranged from 0 to 22 (*M* = 6.15, *SD* = 5.20). For the current analysis, depressive symptomatology was a continuous measure to investigate if being low in mood was associated with particular behaviours or deficits (see section 1.4).

5.1.5 Main study variables

Descriptives for the main study variable are displayed in Table 3 in Appendix I. It can be seen that participants scored significantly higher on cognitive empathy (*M* = 32.90) than affective empathy (*M* = 30.99) $t(66) = 2.613$, $p = .001$, however these scales were highly correlated $r = .435$, $p<.001$. Participants scored significantly higher on anger rumination (*M* = 33.66) than sadness rumination (*M* = 29.66) $t(67) = -3.677$, $p < .001$. These two measure were also highly correlated $r = .712$, $p < .001$

On the emotional recognition scores measured by the FEEST, participants found anger the most difficult to recognise with a total number correct mean score of 11.38 (*SD* = 6.31), followed by fear (*M* = 14.07, *SD* = 4.61), disgust (*M* = 14.78, *SD* = 5.81), sadness (*M* = 17.10, *SD* = 3.09), surprise (*M* = 18.31, *SD* = 2.13) and happiness the easiest (*M* = 19.28, *SD* = 1.46).

On the TOSCA, there were two subscales for each of guilt and shame. Participants scored significantly higher on guilt reparative behaviour (M = 53.05, SD = 11.09) than on the guilt affect and cognition (M = 46.55, SD = 12.40) $t(61) = -6.17$, $p < .001$. In relation to shame, participants were significantly more likely to appraise themselves negatively when feeling shamed (M = 34.26, SD = 11.99) rather than use avoidance (M = 28.56, SD = 10.09) $t(61) = 5.161$, $p < .001$.

On the SDQ, participants scored significantly different to the norms on all subscales except emotional problems with significantly higher than average scores on the conduct problems subscale $t(67) = 9.31$, $p < .001$, hyperactivity subscale $t(67) = 6.90$, $p < .001$, peer problems $t(67) = 5.77$, $p < .001$, and total difficulties $t(67) = 7.78$, $p <. 001$. The participants' scored significantly lower on the prosocial behaviour scale $t(67) = -6.70$, $p < .001$.

5.2 Preliminary analysis

5.3 Sampling distributions

The data was analysed for outliers and normality, through both visual inspection of histograms and pp-plots and skew and kurtosis values (see Table 4 in Appendix I). Skew and kurtosis statistics for each variable were converted to z scores using the standard error and a value of 2.58 was used as an acceptable cut-off for the assumption of normality to be met (Field, 2009). The SMFQ data was positively skewed and therefore a log transformation was conducted reducing its skew and kurtosis to within a normal distribution. All further analysis was conducted using the transformed variable. Other variables such as age and the emotions from the FEEST were not normally distributed but would not be expected to be and therefore no transformations were computed on these variables.

Additionally the Kolmogorov-Smirnov test was run on all data to establish whether the scores significantly differed to a normal distribution. This revealed that in addition to the above mentioned variables, the emotional problems and conduct problems subscales of the SDQ were significantly different to a normal distribution ($p <. 05$). As these variables were not used in the main analysis they were left untransformed.

Further analysis was conducted to investigate if there were significant associations between the main study variables and the sample demographics (see Table 5 in Appendix I for correlations between demographics and the main study variables).

5.3.1 Ethnicity

There were no a priori reasons to look at the association of ethnicity on study variables. However, analysis[2] revealed that there were significant differences with white participants experiencing more shame (avoidance) $t(60) = 1.97$, $p = .053$ and being less likely to externalise blame $t(60) = -2.34$, $p = .023$.

5.3.2 Age

Correlation analysis was conducted to investigate whether age was correlated with the main study variables. Age was significantly correlated with ICU uncaring subscale $r = -.301$, $p = .013$ and number of angry faces recognised $r = .275$, $p = .039$.

5.3.3 Verbal IQ

Correlation analysis was conducted to investigate whether verbal IQ as measured by the BPVS was correlated with the main study variables. Verbal IQ was significantly correlated with ICU uncaring subscale $r = -.354$, $p = .008$, shame (negative self-appraisal) $r = -.433$, $p = .001$, shame (avoidance) $r = -.502$, $p < .001$ and number of sad faces recognised $r = .357$, $p = .007$.

5.3.4 Gender

Independent sample t-tests were conducted to compare the difference between males and females on the main study variables. This analysis revealed females scored significantly higher on affective empathy $t(65) = -2.16$, $p = .035$, number of disgust faces recognised $t(55) = -2.14$, $p = .037$, sadness rumination $t(66) = -3.18$, $p = .002$ and anger rumination $t(66) = -1.99$, $p = .050$ and females scored significantly lower on self-esteem $t(66) = 3.38$, $p=.001$.

[2] Due to small sample size, participants' ethnicity was coded into White British/White other (n=31) and all other ethnicities (n=37) to investigate if there was differences.

5.4 Main analysis of the hypotheses

Bivariate zero order correlation were implemented to see the associations between the main study variables. For all zero order correlations see Table 6 in Appendix I. Bivariate zero order correlations (*r*) revealed the variables associated with depressive symptomatology and callous unemotional traits (see Tables 1, 2 and 3). This correlation analysis showed that there was very little overlap between depressive symptomatology and callous unemotional traits (r = .130) providing support for the distinction using the two features of problem behaviour.

There were no significant correlations between participant age, gender and verbal IQ and either depressive symptomatology or callous unemotional traits (see Table 1). Total delinquency was associated with both depressive symptomatology and callous unemotional traits, however using a more conservative alpha level of $p < .01$ only the association with depressive symptomatology remained (r = .350 p = .005). This was still significant when controlling for callous unemotional traits using a partial correlation r_p = .330, p = .009.

Using a conservative alpha level of $p < .01$ to take into account multiple testing, depressive symptomatology was significantly associated with sadness and anger rumination and self-esteem, whilst marginally associated ($p < .05$) with shame (avoidance), shame (self-appraisal) and a trend towards number of fearful faces recognised (p = .07). Callous unemotional traits were significantly associated with guilt (affect and cognition), guilt (reparative behaviour) and self-esteem whilst marginally associated with affective empathy (p = .027). See Tables 2 and 3 for correlation statistics.

	Sample size (r_p)	Depressive symptomatology (SMFQ)		Callous unemotional (total ICU)	
		Pearson correlation (r)	Partial correlation (r_p)	Pearson correlation (r)	Partial correlation (r_p)
Age	60 (59)	.217	.227	-.062	-.093
Gender	60 (59)	.142	.150	-.048	-.067
VIQ	55 (54)	-.021	-.039	.114	.119
MFQ	60	1	-	.130	-
ICU total	60	.130	-	1	-
Total delinquency	60	.350**	.330**	.261*	.232

* Correlation is significant at the 0.05 level (2 tailed)

** Correlation is significant at the 0.01 level (2 tailed)

Table 1: Zero order and partial correlations for depressive symptomatology and callous unemotional traits with demographics and total delinquency (whilst controlling for the other feature of problem behaviour).

5.4.1 Hypothesis 1

a) *Depressive symptomatology will be positively associated with guilt, shame and rumination whilst being negatively associated with self-esteem and this will still be evident when controlling for callous unemotional traits.*

To test the hypotheses, after zero order correlations (*r)* were conducted, partial correlation (r_p*)* were implemented to examine the relationship between the two features of problem behaviour and the main study variables whilst controlling for the other. Using a more conservative alpha level of $p < .01$ to take into account multiple testing, as predicted, depressive symptomatology was positively associated with sadness rumination $r_p = .461$, $p = .001$ [$r = .425$, $p < .001$] and anger rumination $r_p = .423$, $p = .001$ [$r = .415$, $p = .001$] and negatively associated with self-esteem $r_p = -.452$, $p < .001$ [$r = -.465$, $p < .001$]. However using this more stringent alpha level, shame (negative self-appraisal) $r_p = .279$, $p = .030$ [$r = .243$, $p =$

.057], and shame (avoidance) r_p = .253, p = .049 [r = .260, p = .041] did not reach significance.

b) *Callous unemotional traits will be positively associated with self-esteem and negatively associated with guilt, and this will still be evident when controlling for depressive symptomatology.*
    i) *Furthermore, any association between callous unemotional traits and shame and rumination will be accounted for by depressive symptomatology.*

In testing the second part of the hypothesis using an alpha level of p < .01, it was shown that whilst controlling for depressive symptomatology, callous unemotional traits were negatively associated with guilt (affect and cognition) r_p = -.477, p < .001 [r = -.453, p <.001], guilt (reparative behaviour) r_p = -.534, p < .001 [r = -.536, p < .001] and self-esteem r_p = -.328, p = .010 [r = -.348, p = .006]. Using this more stringent alpha level, shame (negative self-appraisal) r_p = -.252, p = .051 [r = -.210, p = .101], and sadness rumination r_p = -.271, p = .035 [r = -.188, p = .144] did not reach significance. Therefore hypothesis 1 was supported.

	Sample size (r_p)	Depressive symptomatology (SMFQ)		Callous unemotional (total ICU)	
		Pearson correlation (*r*)	Partial correlation (r_p)	Pearson correlation (*r*)	Partial correlation (r_p)
Guilt (affect & cognition)	60 (59)	.122	.205	-.453**	-.477**
Guilt (reparative behaviour)	60 (59)	-.055	.018	-.536**	-.534**
Shame (negative self-appraisal)	60 (59)	.243	.279* (*p* = .030)	-.210	-.252 (*p* = .051)
Shame (avoidance)	60 (59)	.260*	.253* (*p* = .049)	.075	.043
Sadness rumination	60 (59)	.425**	.461**	-.188	-.271* (*p* = .035)
Anger rumination	60 (59)	.415**	.423**	-.034	-.098
Self-esteem	60	-.465**	-.452**	-.348**	-.328**

* Correlation is significant at the 0.05 level (2 tailed)
** Correlation is significant at the 0.01 level (2 tailed)

Table 2: Zero order and partial correlations for depressive symptomatology and callous unemotional traits with main study variables for hypothesis 1 (whilst controlling for the other feature of problem behaviour).

5.4.2 Hypothesis 2

a) *Callous unemotional traits will be negatively associated with empathy and the number of fear and sad faces correctly identified and this will still be evident when controlling for depressive symptomatology.*

Whilst controlling for the effect of depressive symptomatology, callous unemotional traits were negatively associated with affective empathy r_p = -.309, *p* = .015 [*r* = -.281, *p* = .027] but not with cognitive empathy r_p = -.220, *p* = .088 [*r* = -.199, *p* = .121]. However, contrary to the hypothesised prediction, there was no significant association between callous unemotional traits and the number of sad r_p = .211, *p* = .114, [*r* = -.213, *p* = .108] and fearful faces correctly identified r_p = -.047, *p* = .730, [*r* = -.006, *p* = .965].

b) *Depressive symptomatology will be positively correlated with the number of sad and fearful faces correctly identified even after controlling for callous unemotional traits, but there will be no association with empathy.*

For second part of the hypothesis, contrary to the prediction, there was only a trend towards depressive symptomatology being associated with the number of fearful faces recognised, r_p = .244, p = .068 [r = .240, p = .070] and there was no significant association with the number of sad faces recognised r_p = -.006, p = .963 [r = .029, p = .831]. As predicted there was no significant associations with affective empathy r_p = .216, p = .106 [r = .152, p = .256] or cognitive empathy r_p = .188, p = .162 [r = .148, p = .267]. Therefore, hypothesis 2 was only partially supported.

	Sample size (r_p)	**Depressive symptomatology (SMFQ)**		**Callous unemotional (total ICU)**	
		Pearson correlation (r)	**Partial correlation (r_p)**	**Pearson correlation (r)**	**Partial correlation (r_p)**
Cognitive empathy	60 (59)	.132	.163	-.199	-.220
Affective empathy	60 (59)	.164	.211	-.281*	-.309**
Fearful faces recognised	56 (55)	.240	.244	-.006	-.047
Sadness faces recognised	56 (55)	.029	-.006	.213	.211

* Correlation is significant at the 0.05 level (2 tailed)
** Correlation is significant at the 0.01 level (2 tailed)

Table 3: Zero order and partial correlations for depressive symptomatology and callous unemotional traits with main study variables for hypothesis 2 (whilst controlling for the other feature of problem behaviour).

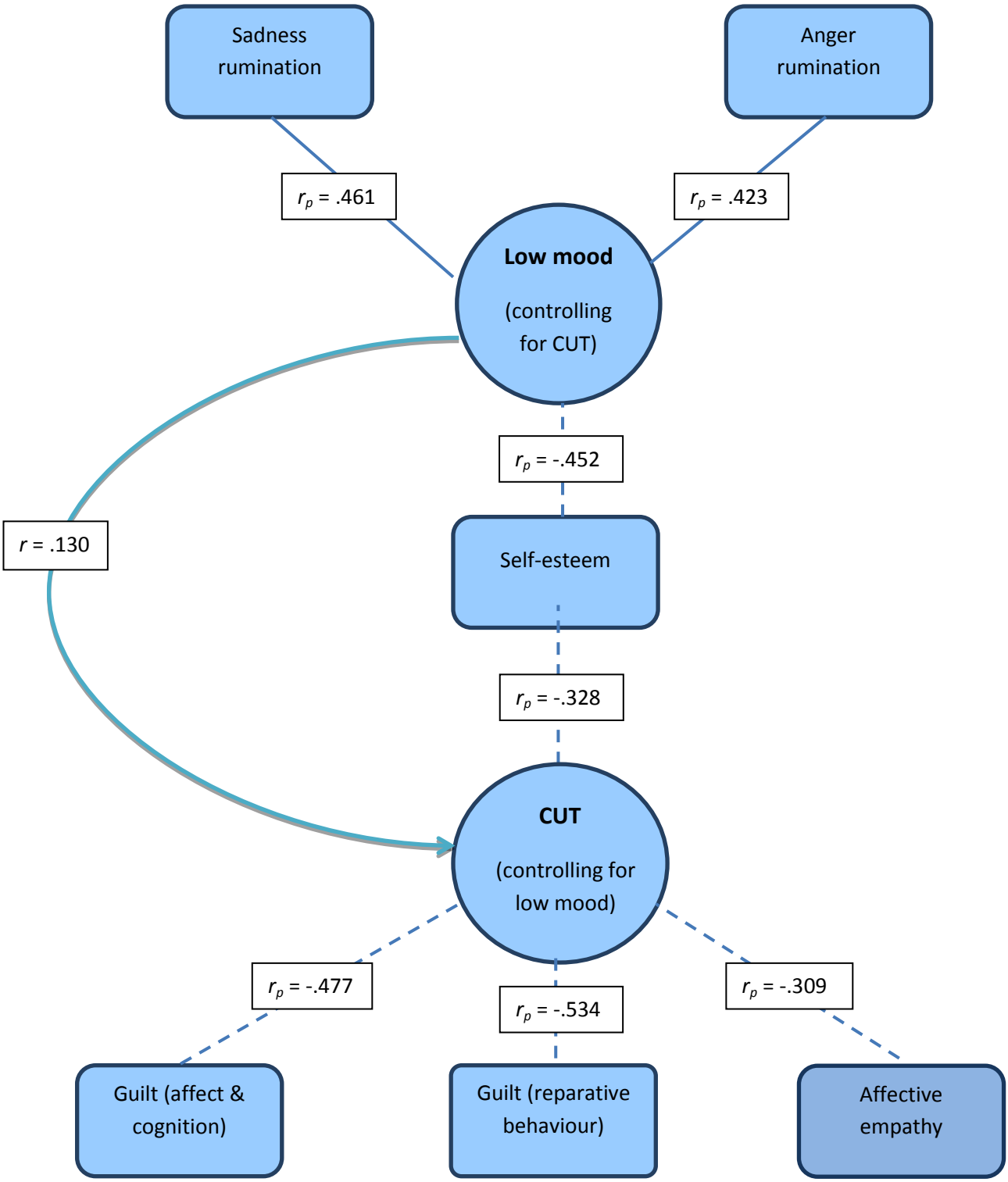

Figure 3: Illustrates the model of the significant (p < .01) partial correlations *(r_p)* across both hypotheses

5.5 Further exploration of hypothesis 1: Predicting depressive symptomatology

The variables that were shown to be associated with depressive symptomatology in section 5.4 above were used in a hierarchical regression with depressive symptomatology (MFQ score) as the dependent variable. In order to control for their effects, demographics (age, gender and VIQ) were entered into step 1 of the model and callous unemotional traits (ICU total score) entered into step 2 of the model. The hypothesised predictors (self-esteem, sadness rumination and anger rumination) were entered into step 3 of the model. The regression statistics are in Table 4.

The variables included in step 1 of the model explain 7.8% of the variance in depressive symptomatology. Introducing callous unemotional traits in step 2 explains 11.3% of the variance which is an additional 3.6% over and above model 1. Finally, adding the hypothesised predictors explains 40.6% of the variance in depressive symptomatology which is significant F (7,49) = 4.777, p < .001. The predictors in the final model provide an additional 29.2% over and above model 2. This is a significant change F (3,49) = 8.036, p < .001. The final regression model demonstrates that self-esteem is the strongest unique predictor for depressive symptomatology (β = -.420, p = .006).

	R	R^2	R^2 *Change*	*B*	*SE*	*β*	*t*
Step 1	.278	.078	.078				
Gender				.56	.092	.082	.605
Age				.102	.052	.265	1.962
VIQ				.001	.004	.053	.384
Step 2	.336	.113	.036				
Gender				.055	.091	.082	.608
Age				.109	.052	.285*	2.117
VIQ				.001	.004	.035	.256
Total ICU				.007	.005	.191	1.446
Step 3	.637	.406	.292**				
Gender				-.147	.091	-.218	-1.617
Age				.065	.045	.171	1.439
VIQ				.001	.003	.047	.403
Total ICU				.003	.005	.066	.506
Self-esteem				-.031	.011	-.420**	-2.898
Sadness rumination				.004	.006	.155	.791
Anger rumination				.006	.005	.220	1.229

** Correlation is significant at the 0.01 level (2 tailed)

Table 4: Hierarchical regression statistics for predicting depressive symptomatology

Due to overlap and multicollinearity, a backward elimination regression was implemented to clarify the main predictors of depressive symptomatology. In the final step, self-esteem (β = -.400, p = .001) and anger rumination ($\beta = .310$, $p = .011$) were the strongest predictors (see Table 5) accounting for 34% of the variance in depressive symptomatology (F (2,54) = 14.117, p < .001).

	R^2	*B*	*SE*	β	*t*
Step 6	.343				
Self-esteem		-.030	.009	-.400**	-3.396
Anger rumination		.009	.003	.310**	2.627

Table 5: Backward Elimination regression statistics for predicting depressive symptomatology

As anger and sadness rumination were highly correlated (r = .71), a regression was implemented with sadness rumination and then another with anger rumination. The adjusted R^2 values were very similar indicating that it is rumination that predicts depressive symptomatology and there is no additional value to distinguishing between sadness and anger rumination (see Tables 6 and 7).

	R	R^2	R^2 *Change*	*B*	*SE*	β	*t*
Step 1	.577	.333	.313				
Sadness rumination				.008	.003	.309**	2.872
Self-esteem				-.027	.007	-.393**	-3.646

Table 6: Backwards regression statistics for using sadness rumination in predicting depressive symptomatology

	R	R^2	R^2 *Change*	*B*	*SE*	β	*t*
Step 1	.584	.341	.321				
Anger rumination				.009	.003	.318**	3.016
Self-esteem				-.028	.007	-.406**	-.3856

Table 7: Backwards regression statistics for using anger rumination in predicting depressive symptomatology

5.6 Further exploration of hypothesis 2: Predicting callous unemotional traits

A hierarchical regression was performed with callous unemotional traits (ICU total score) as the dependent variable. In order to control for their effects, demographics (age, gender and VIQ) were entered into step 1 of the model and depressive symptomatology (MFQ score) entered into step 2 of the model. The hypothesised predictors (guilt (reparative behaviour), guilt (affect and cognition), self-esteem and affective empathy) were entered into step 3 of the model. The regression statistics are in Table 8.

The variables included in step 1 of the model explain 2.3% of the variance in callous unemotional traits. Introducing depressive symptomatology in step 2 explains 6.1% of the variance which is an additional 3.8% over and above model 1. Finally, adding the hypothesised predictors explains 45.5% of the variance in callous unemotional traits which is significant F (8,48) = 5.00, $p < .001$. The predictors in the final model provide an additional 39.4% over and above model 2. This is a significant change F (4,48) = 8.665, $p < .001$. The final regression model demonstrates that self-esteem is the strongest unique predictor for callous unemotional traits (β = -.360, p = .015), followed by affective empathy (β = -.235, p = .047).

	R	R^2	R^2 *Change*	*B*	*SE*	*β*	*t*
Step 1	.151	.023	.023				
Gender				.044	2.443	.003	.018
Age				-1.006	1.371	-.102	-.734
VIQ				.063	.095	.094	.660
Step 2	.246	.061	.038				
Gender				-.247	2.427	-.014	-.102
Age				-1.535	1.406	-.156	-1.092
VIQ				.056	.095	.083	.589
MFQ				5.206	3.601	.202	1.446
Step 3	.674	.455	.394**				
Gender				-.800	2.303	-.046	-.347
Age				-2.027	1.142	-.206	-1.775
VIQ				.008	.079	.012	.105
MFQ				1.726	3.459	.067	.499
Affective empathy				-.304	.149	-.235*	-2.038
Guilt (affect & cog)				-.103	.129	-.154	-.802
Guilt (rep beh)				-.256	.144	-.331	-1.773
Self-esteem				-.688	.273	-.360**	-2.521

Table 8: Hierarchical regression statistics for predicting callous unemotional traits

A backward elimination regression was implemented to clarify the main predictors of callous unemotional traits. In the 5th model, Guilt reparative behaviour (β = -.464, p <.001), self-esteem (β = -.357, p = .002) and affective empathy (β =-.246, p = .028) were the strongest predictors (see Table 9), accounting for 44% of the variance in callous unemotional traits (F (3,58) = 15.394, p < .001).

	R^2	*B*	*SE*	β	*t*
Step 5	.444				
Guilt (reparative behaviour)		-.358	.083	-.464**	-4.332
Affective empathy		-.318	.141	-.246*	-2.261
Self-esteem		-.683	.205	-.357**	-3.327

Table 9: Backwards regression statistics for predicting callous unemotional traits

5.7 Exploratory regression analysis to predict delinquency

To explore whether depressive symptomatology, callous unemotional traits or any of the characteristics associated with them were predictive of delinquent behaviour, regressions were run.

A regression was performed with total delinquency as the dependent variable. The predicted characteristics of depressive symptomatology and callous unemotional traits were entered into the model (guilt (reparative behaviour), affective empathy, self-esteem and anger rumination). These variables explain 35.1% of the variance in delinquency with self-esteem found as the strongest predictor (β = -.267, p = .046). The regression statistics are in Table 10.

	R	R^2	R^2 *Change*	*B*	*SE*	*β*	*t*
	.351	.124	.124				
Guilt (reparative behaviour)				-.075	.071	-.140	-1.059
Affective empathy				-.003	.122	-.003	-.024
Self-esteem				-.345	.169	-.267*	-2.041
Anger rumination				.075	.071	.143	1.049

Table 10: Hierarchical regression statistics for predicting delinquency

Next a stepwise backward elimination regression was implemented. The final model demonstrated in the 4th model that self-esteem was the strongest predictor (*β* =-.310*, p* = .014) accounting for 9.6% of the variance. (see Table 11).

	B	*SE*	*β*	*t*	*Sig*
Self-esteem	-.401	.159	-.310	-2.526	.014

Table 11: Backward elimination regression statistics for predicting delinquency

6 Discussion

6.1 Summary of findings

6.1.1 Hypothesis 1

The rationale for this hypothesis was to investigate the characteristics that were conceptually related to depression to find whether they are important characteristics of depressive symptomatology in adolescents who engage in antisocial and disruptive behaviours. Furthermore whether they were only related to depressive symptomatology or whether they played a role in individuals with callous unemotional behaviour. This would support the assertion that individuals with externalising behaviours are a heterogeneous population with differentiating cognitive and affective characteristics that could be focused on within treatment. As there was very little overlap between depressive symptomatology and callous unemotional traits (r = .130), this provides support for the heterogeneity of these problem behaviour in adolescents engaging in antisocial behaviour.

A core feature conceptually related to pure depression is self-esteem. As predicted, low self-esteem was significantly related to depressive symptomatology (r_p = -.452 whilst controlling for callous unemotional traits). The predicted relationship with callous unemotional traits was less clear; however low self-esteem was also significantly related to callous unemotional traits (r_p = -.328 whilst controlling for depressive symptomatology). Therefore self-esteem was associated with depressive symptomatology over and above callous unemotional traits and vice versa suggesting that they both make an independent contribution to low self-esteem. This indicates that self-esteem is a factor that should be focused on in treatment for externalising behaviours in both individuals with callous unemotional traits and those with depressive symptomatology.

Furthermore the regression analysis indicated the self-esteem and rumination were predictive of depressive symptomatology and therefore would potentially be the most important factors to focus on within treatment.

Both anger and sadness rumination were significantly positively associated with depressive symptomatology whilst controlling for callous unemotional traits, demonstrating that another core feature of pure depression also plays a role in antisocial adolescents with depressive symptomatology but not in those high on callous unemotional traits. Sadness rumination was negatively associated with callous unemotional traits when controlling for depressive symptomatology however this did not reach significance (p = .035) once a more stringent alpha level was implemented to control for multiple testing.

As predicted both subscales of guilt (affect and cognition and reparative behaviour) were significantly negatively related to callous unemotional traits whilst controlling for depressive symptomatology. However, contrary to predictions there was no significant relationship between depressive symptomatology and either subscales of guilt.

Both shame as measured by avoidance and shame as measured by negative self-appraisal were positively correlated with depressive symptomatology whilst controlling for callous unemotional traits, however this did not reach significance once a more stringent significance level was implemented to control for multiple testing. There was no significant relationship between callous unemotional traits and shame.

6.1.2 Hypothesis 2

The rationale for this hypothesis was to investigate whether characteristics conceptually related to callous unemotional traits would be specific to individuals with high rates of these traits engaging in antisocial and disruptive behaviour in contrast to those with depressive symptomatology.

In partial support of the prediction, affective was significantly negatively related to callous unemotional traits whilst controlling for depressive symptomatology. However the predicted relationship with cognitive empathy did not reach significance (p = .08).

Furthermore, regression analysis revealed that a lack of guilt (reparative behaviour), affective empathy and low self-esteem were the main predictors of callous unemotional traits in this study. There could be many explanations for this relationship between these three variables, for example a lack of guilt and empathy to protect an already fragile self-esteem, or low self-esteem arising from the response of others to the individuals' behaviour which is exacerbated by a lack of guilt and empathy. These characteristics will be discussed in more detail in the next section.

Contrary to predictions, those high in callous unemotional traits did not demonstrate deficits in fearful and sad emotion recognition. Similarly there was no significant relationship between depressive symptomatology and number of sad faces recognised, and only a trend towards the number of fearful faces recognised (p = .068). The former is particularly surprising given the extensive research finding a relationship between emotional recognition and callous unemotional traits. This will be discussed in more detail in section 6.2.5.

6.1.3 Predicting delinquency

Depressive symptomatology was significantly associated with delinquency when controlling for callous unemotional traits in contrast to only a trend in the opposite direction. However, in exploratory regression analysis, low self-esteem was found to be the main predictor of delinquent behaviour. As self-esteem was associated with both depressive symptomatology and callous unemotional traits it reinforces the view that self-esteem is a key feature to focus on within treatment. However, as the measure of delinquency was self-report, only tentative conclusions can be drawn.

6.1.4 Summary

As expected there were high rates of depressive symptomatology and callous unemotional traits in this sample of adolescents engaging in externalising behaviour. These results support the distinction between the two features of problem behaviour in terms of potentially different cognitive profiles associated with callous unemotional traits versus depressive symptomatology in adolescents

engaging in antisocial behaviour. The increased rumination (and potentially shame) in those with comorbid depressive symptomatology and the low levels of guilt, empathy and (potentially sadness rumination) in those with callous unemotional traits may suggest a different treatment focus if personalising interventions. Interestingly, low self-esteem was associated with them both and could be pertinent in any intervention for conduct problems. Overall regression analysis demonstrated that in this study low self-esteem predicted delinquency over and above the other associated characteristics. Personalised interventions could focus on both the common features and those characteristics specific to the individuals' presentation (i.e. depressive symptomatology or callous unemotional traits).

6.2 Discussion of findings in the context of previous research

6.2.1 Importance of low self-esteem in adolescents engaging in externalising behaviour

In the regression analysis, self-esteem was a predictor of both depressive symptomatology and callous unemotional traits and therefore an important characteristic of adolescents engaging in antisocial behaviour. In line with previous research, low self-esteem was significantly related to depressive symptomatology (Abramson et al, 1978; Beck, 1967; Kernis et al, 1998; Lewinsohn et al, 1988; Orth et al, 2009; Sowislo & Orth, 2013). However, it was also significantly related to callous unemotional traits. The prominent role of low self-esteem in this sample of antisocial adolescents supports previous studies that have shown an association between low self-esteem and externalising behaviour, particularly aggression (Donnellan et al, 2005; Fong et al, 2008; Walker & Bright, 2009; Webster, 2006). Perhaps more of note is the prominent role of low self-esteem in those high in callous unemotional traits.

Although considered a core feature of depression, there is less research on low self-esteem in individuals with callous unemotional traits. A defining feature of psychopathy is narcissism which is often erroneously used synonymously for high self-esteem, however these are different constructs as evidenced by the negligible correlation between these two variables in the current study (-.037). This study has

demonstrated that it is equally important to focus on self-esteem in individuals with callous unemotional traits as it is with individuals with depressive symptomatology as they both make an independent contribution to low self-esteem.

The other issue raised in the area of low self-esteem is whether it is a cause (or vulnerability) for internalising and externalising behaviour or a result (scar) of these behaviours (Zeigler-Hill, 2011). Studies have found various factors implicated in the causal role of low self-esteem in externalising behaviour. It could be that these adolescents engage in antisocial behaviour to enhance their self-esteem through factors such as improved peer status (Carroll et al, 1999) or the associated feelings of power (Ostrowsky, 2010). Additionally, the social environment for these individuals may mean that they are frequently involved in interpersonal conflict and this challenge is a threat to their self-esteem. Their externalising behaviour enhances or protects themselves from further reductions of their self-esteem. Furthermore, the casual role of low self-esteem in externalising behaviours may be different in individuals with depressive symptomatology to those with callous unemotional traits so although both are associated with low self-esteem the causal mechanisms are unclear. However, we have to hold in mind that although the association between depressive symptomatology and callous unemotional traits was low, there may be some individuals with both of these features.

Low self-esteem may not be a cause of externalising behaviour but rather a result of it. Individuals with externalising behaviour often struggle academically, have poor interpersonal relationships, and repeatedly incur reprimanding from home, school and the legal system for their antisocial behaviour. This continual attack on their view of themselves will impact on their self-esteem and they may start viewing themselves as 'bad', be socially excluded or rejected by peers and therefore engage in more externalising behaviour both as a result of self-fulfilling prophecy and in an attempt to enhance their self-esteem or to alleviate the negative affect. The importance of finding an association with low self-esteem in individuals with callous unemotional traits is interesting given that this sensitivity to attacks on their sense of self does not necessarily fit with the general view that individuals with callous unemotional traits are uncaring and insensitive to broader social cues.

6.2.2 Importance of rumination in adolescents engaging in externalising behaviour

In line with previous research which has found an association between depression and rumination (Mor & Winquist, 2002; Morrow & Nolen-Hoeksema, 1990; Nolen-Hoeksema, 1991, 2000; Peled & Moretti, 2009), the current study found that rumination predicted depressive symptomatology in a sample of adolescents engaging in externalising behaviours. The process of rumination intensifies and maintains negative affect making it difficult for the individual to separate from their negative thoughts (Carson & Cupach, 2000; Peled & Moretti, 2010; Sukhodolsky et al, 2001). With this increased focus and high level of negative affect, an individual may be more susceptible to provocation and therefore more likely to react aggressively, particularly as depression in adolescents is associated with irritability (Biederman, Faraone, Mick & Lelon, 1995; Kovacs, Akiskal, Gatsonis & Parrone, 1994; Poznanski, 1982). In a similar vein to some individuals with externalising behaviours being described as 'hot-headed' in terms of their emotions (Arsenio, Adams & Gold, 2009; Dodge, 1991), individuals that ruminate and have high levels of depressive symptomatology may be poorer at controlling their behaviour due to being in a heightened state of arousal. This may lead to emotional dysregulation difficulties in which aggression may serve to regulate this negative affect or at least be a temporary distraction (Anestis et al, 2008; Bushman et al, 2001). In contrast, rumination may also be linked to proactive aggressive, given that the individual would have spent time ruminating on the negative affect or situation and may plan to retaliate.

Studies that have found an association between rumination and externalising behaviour have suggested that self-blame or shame may play a role (Pedersen et al, 2011; Peled & Moretti, 2010). Whilst Peled and Moretti (2010) argue it could reduce aggressive behaviour, Pedersen et al (2011) argue that feelings of shame may promote aggression. In the current study, within a sample of adolescents engaging in antisocial behaviour, depressive symptomatology, shame, low self-esteem and rumination were all associated. However it was low self-esteem above the others that predicted engagement in delinquent behaviours.

The core features of callous unemotional traits are being callous, unemotional and uncaring, indicating a more 'cold' personality style (Arsenio, Adams & Gold, 2009; Dodge, 1991). Higher levels of callous unemotional traits were associated with less rumination, particularly sadness rumination, although this did not reach significance once a stricter alpha level was implemented. This association would fit with their emotional overcontrol and cold processing style. Perhaps the features of being uncaring and unemotional may result in an absence of negative affect, being less concerned about a situation or more emotionally detached which may mean they are less likely to engage in ruminative thoughts.

6.2.3 Importance of empathy in adolescents engaging in externalising behaviour

In line with previous research, callous unemotional traits were associated with a lack of empathy (Dadds et al, 2009; Munoz, Qualter & Padgett, 2010; Pardini, Lochman & Frick, 2003). However this was only the case for affective empathy, as cognitive empathy on its own did not reach significance. This is similar to previous research which has found the relationship with affective empathy more stable especially in older children (Dadds et al, 2008: Dadds et al, 2009; Jones et al, 2010; Loney et al, 2003). This data would be consistent with the idea that individuals with callous unemotional traits understand on an empathic level but have more difficulty feeling empathic (Dadds et al, 2009).

The lack of guilt and empathy that individuals with callous unemotional traits experience are believed to be specifically implicated in disruption to the development of conscience and moral behaviour (Kochanska, 1993; see Frick and Morris, 2004; Frick & Viding, 2009; Frick & White, 2008 for a review). Empathy inhibits aggression and other externalising behaviours through concern for others and the negative affective arousal it elicits. A lack of empathy has been shown to be associated with aggression, hostility and other antisocial behaviour (Feshbach, 1997; Jolliffe & Farrington, 2004; Lovett & Sheffield, 2007).

6.2.4 Importance of feelings of guilt and shame in adolescents engaging in externalising behaviour

The empirical evidence suggests that guilt and shame are distinct emotions and although both result in negative affect they have distinct action tendencies which results in different outcomes for the individual. The current study supported this by finding that increased shame (albeit not significant once a stricter alpha level was implemented) but not guilt was associated with depressive symptomatology whilst a lack of guilt was associated with callous unemotional traits whilst there was no relationship with shame.

Consistent with Kim et al's (2001) meta-analysis, in the current study despite not reaching significance once a stricter alpha level was implemented; shame, but not guilt was associated with depressive symptomatology. The association between shame (but not guilt) and depressive symptoms can be understood through a number of processes. The phenomenology is similar as both involve feelings of inferiority, worthlessness and helplessness. The aspects of negative self-appraisal and avoidance as measured by shame in the current study were associated with depressive symptomatology which are also central tenets of the cognitive behavioural model of depression. Similarly the attributions made in the affective state of shame (stable, internal/uncontrollable and global) are the same as those causally related to depression (Abramson et al, 1978). The other important process of note is rumination. The internal focus of shame and its associated feeling of being defective or 'bad' can prompt ruminative processes. Rumination has been shown to mediate between shame and depression (Orth, Berking & Burkhardt, 2006). In the current study, rumination was associated with both shame and guilt, however only rumination was significantly associated with depressive symptomatology, whilst shame was marginally significant.

Shame can result in an individual feeling powerless, helpless and worthless (Marshall, Marshall, Serran and O'Brien, 2009). Shame has been linked to emotional regulation deficits and therefore an individual may engage in externalising behaviour in an attempt to restore feelings of power and reduce the negative affect associated with shame (Covert, Tangney & Maddux, 2003). Externalising behaviour

may both regulate emotions and increase self-esteem therefore reducing feelings of shame.

Studies have consistently shown a link between shame and low self-esteem (Burggraf & Tangney, 1989; Tangney, 1990; Tangney, Wagner, Fletcher & Gramzow, 1992). Individuals who engage in externalising behaviours are often in a social environment where their sense of self may be a threat to others, leading to frequent involvement in interpersonal conflict (Anderson, 1999). This conflict has the potential to impact on both their level of self-esteem and shame which can then lead to more externalising behaviour in an attempt to reduce these feelings. Externalising behaviour can increase feelings of power and move individuals up the social hierarchy, thus increasing self-esteem and reducing feelings of shame (Gilbert, 1998). In the current study, both callous unemotional traits and depressive symptomatology were associated with low self-esteem, however only depressive symptomatology was associated with increased levels of shame (albeit marginally significant). It may be that deficits in empathy and guilt impede the elicitation of shame in individuals with callous unemotional traits and their low self-esteem is a result of a different process to low self-esteem in those with depressive symptomatology.

This study found that shame was marginally associated with depressive symptomatology in individuals engaging in externalising behaviour but further research is needed to both confirm this and to explore the role that shame might play (i.e. an emotional regulation strategy, to enhance self-esteem). If further research confirms the role of shame in individuals engaging in externalising behaviour, treatments could include this as a component. For example, shame is associated with anger and therefore could be used in anger management particularly if used as an emotional regulation strategy by the individual.

Cleckley (1964) argued that psychopaths have no sense of shame. Consistent with this, the study found that there was no significant relationship between those high in callous unemotional traits and feelings of shame. The non-significant negative relationship between callous unemotional traits and shame (negative self-appraisal)

was interesting given the similarities between this and low self-esteem which was associated with callous unemotional traits in the opposite direction. This was in contrast to the relationship in individuals with depressive symptomatology which was negatively correlated with self-esteem and positively correlated with shame (negative self-appraisal). This indicates that in those individuals with depressive symptomatology, they experience low self-esteem and were also appraising themselves negatively which is dissimilar to those high in callous unemotional traits. The measures of self-esteem and negative self-appraisal are seemingly tapping into similar constructs. For example, questions on the TOSCA measuring shame (negative self-appraisal) state, 'I would feel like a loser' or 'I would feel like a complete failure' which is similar to those on the self-esteem measure stating 'all in all, I feel like a failure'. However, although similar, the measures and the concepts of shame (negative self-appraisal) and self-esteem are different constructs and may well have different underlying cognitions.

Studies have consistently found a negative relationship between shame and empathy (Burggraf & Tangney, 1989; Tangney, Wagner & Gramzow, 1992). If an individual does not feel shame this may impact on their ability to empathise with others. In the current study, the relationship between callous unemotional traits and a lack of shame might be connected to the individuals' lack of empathy. There was highly significant positive correlations (p <.001) between shame (negative self-appraisal) and cognitive empathy (.344), affective empathy (.378) and total empathy (.429). Interventions would not want to increase shame as can become maladaptive but its role is worth noting. Perhaps by targeting empathy deficits and self-esteem this may reduce antisocial behaviour and have an effect on shame due to the link between shame and self-esteem.

The current study found that both guilt (affect and cognition) and guilt (reparative behaviour) were negatively related to callous unemotional traits. The association with a lack of guilt is unsurprising given as this is a central tenet of callous unemotional traits in children and adolescents, and psychopathy in adults. The lack of guilt and empathy is thought to play an important role in externalising behaviour as the presence of these characteristics inhibits aggression and delinquency

(Hossler et al, 2008; Robinson et al, 2007; Stuewig & McCloskey, 2005; Stuewig et al, 2010; Tangney & Dearing, 2002; Tangney et al, 1996; Tangney et al, 2011).

6.2.5 Emotional recognition in adolescents engaging in externalising behaviour

This study did not replicate the findings that those high in callous unemotional traits have greater difficulties recognising fearful faces (Blair & Coles, 2000; Blair et al, 2001; Blair et al, 2005; Dadds et al, 2008; Marsh & Blair, 2008; Munoz, 2009; Stevens et al, 2001). This may have been for a variety of methodological reasons. For example, other studies have tended to use group comparisons of those high and low in callous unemotional traits rather than these traits as a continuous measure. Additionally, the participants in the current study were excluded from mainstream school and attending specialist school provision, however the levels of callous unemotional traits and delinquency may not have been comparable to studies that have found this effect. It may be that the deficit is more pronounced in highly aggressive individuals. For example, Kimonis et al (2006) found callous unemotional traits was only associated with poorer recognition of distress in children high on aggression.

Loney et al (2003) suggests that the deficit in processing negative stimuli is less pronounced in paradigms that employ effortful processing and a lexical decision paradigm requiring unconscious processing is associated with greater deficits. For example, Williamson, Harpur, and Hare (1991) found that although there were significant differences between individuals high and low in callous unemotional traits on the lexical decision paradigm which involved automatic processing of emotions, there were no differences when participants were asked to rate the emotionality of words which is an effortful process.

Additionally, there was no significant association between depressive symptomatology and sad and fearful emotional recognition, although the latter did reach marginal significance. There has been less research on this area with only one study to date investigating emotional recognition in children with comorbid depression and conduct disorder (Schepman et al, 2012). This study looked at overall accuracy across emotions for both depressive symptomatology and callous

unemotional traits, however it seems that measuring and calculating response bias may yield more conclusive results as the research suggests that depression is associated with bias rather than absolute deficits in emotional recognition (Geerts & Bouhuys, 1998; Hale, 1998; Karparova et al, 2005; Levkovitz et al, 2003). However Schepman et al's study compared groups of individuals with depression or comorbid depression and conduct problems to conduct problems alone rather than a continuous dimension of depressive symptomatology like in the current study.

6.3 Proposing a model

Marshall et al (2009) proposed a model integrating factors pertinent to sex offenders. Although a more extreme group than the participants in the current study, the factors proposed are similar to the characteristics important in individuals with externalising behaviour. They incorporate self-esteem, shame/guilt, cognitive distortions and empathy as they suggest these characteristics are interrelated and mutually influential (see figure 4). Their theory proposes that low self-esteem generates shame which blocks feeling empathy therefore treatment needs to focus on these three factors to be efficacious. In the current study these three factors were significantly associated with one another however those high in callous unemotional traits experienced low self-esteem, a lack of guilt and empathy but these traits were not associated with increased levels of shame. In contrast, those individuals with depressive symptomatology had low self-esteem and did experience increased levels of shame but no relationship with guilt or empathy. It may be that in those with callous unemotional traits their lack of empathy and guilt is blocking the feeling of shame to protect their fragile self-esteem. In those with depressive symptomatology, having capacity for empathy might generate shame (and potentially rumination) in relation to their externalising behaviour which will then exacerbate their already low self-esteem and low mood.

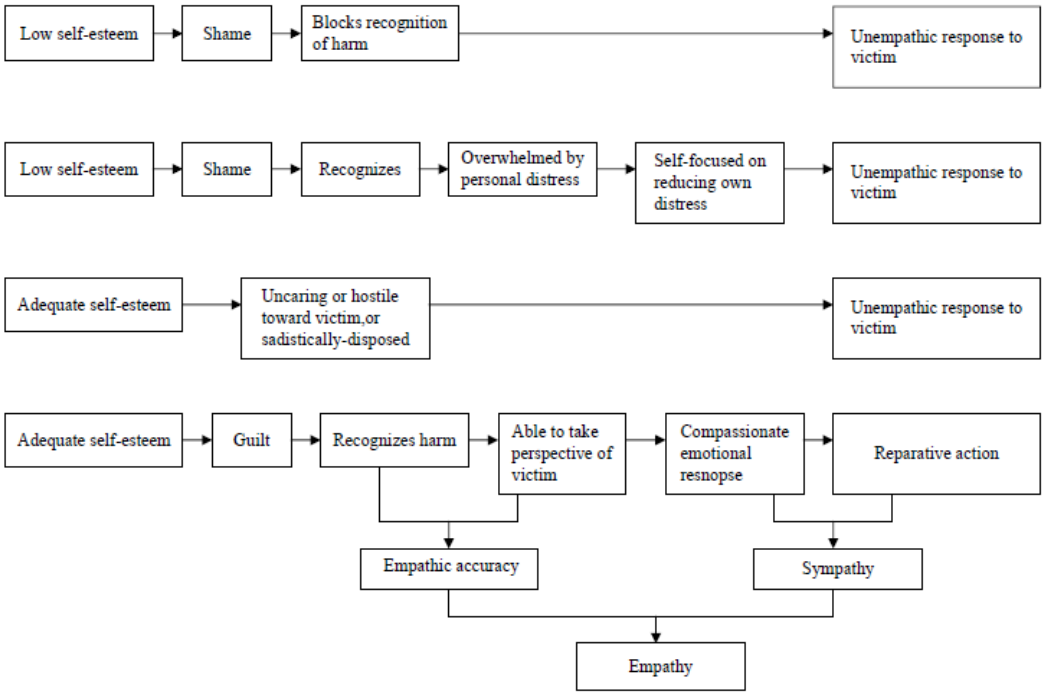

Figure 4: The empathic process in sex offenders (taken from Marshall et al, 2009).

6.4 Clinical implications

The purpose of this study was to explore the characteristics associated with depressive symptomatology and callous unemotional traits in adolescents engaging in antisocial and disruptive behaviour. Despite both DSM-V and ICD-10 classifying individuals into subtypes dependent on their presentation, with the exception of MST which is more personalised, treatment for conduct problems is predominantly universal in nature. Furthermore, research has demonstrated that these treatments have mixed efficacy in their current form and effects may be diluted due to the heterogeneity (Caldwell, McCormick, Umstead & Van Rybroak, 2007; Haas et al, 2011; Hawes & Dadds, 2005; Salekin, 2002). For those cases that do not respond to standard interventions, a personalised approach could be more effective. The findings from this study indicate that individuals with depressive symptomatology have different cognitive and affective characteristics to those with callous unemotional traits on several dimensions. Designing interventions that have components that focus on these characteristics might help to personalise a treatment for heterogeneous cases. For example, a focus on rumination, self-

esteem and potentially shame for those with depressive symptomatology; and guilt, empathy and self-esteem for those high in callous unemotional traits.

Frick and Dickens (2006) have postulated the idea of different interventions depending on the child versus adolescent onset subtypes. For example for the latter, fostering exposure to prosocial peers, structured activities and identity work, in order to increase self-esteem and introduce positive role models. The traditional view is that current treatments such as parent management training or social or problem solving interventions are more effective for childhood onset in the absence of callous unemotional traits. This is because they focus on the environmental factors that play a role in the individual's externalising behaviour (i.e. emotion regulation skills, parent training). Studies have tended to show that those with callous unemotional traits seem to benefit less from the current interventions offered with 90% of the studies in a recent review suggesting those with callous unemotional traits showed poorer treatment outcomes (see Frick et al, 2014 for a review). However, in a recent review Waller et al (2013) on parenting interventions they found that only four studies had evaluated parenting interventions and the impact of callous unemotional traits. They report that all four found that some parenting dimensions (i.e. warmth and harshness) are associated with callous unemotional traits and focusing on these in treatment can impact on these traits. They argue that it is essential that treatments are flexible and personalised to take into account affective processing characteristics of these individuals.

Frick and Dickens (2006) suggest that based on the research early interventions could help parents to foster empathic concern and later interventions could utilise reward oriented response style as traditional punishment oriented approaches may be less effective. Emotion regulation components are less warranted as these individuals are emotionally over controlled rather than undercontrolled. Although the current study did not find effects for difficulties recognising fearful and sad emotions, Dadds, Cauchi, Wimalaweera, Hawes and Brennan (2012) suggested the addition of an emotion recognition empathy training component to current interventions for those with callous unemotional traits. The findings from the

current study would support the inclusion of empathy work (in particular promoting affective empathy) but also the inclusion of components focusing on increasing self-esteem and promoting appropriate levels of guilt. A reward oriented approach would both motivate engagement but also boost low self-esteem in individuals high on callous unemotional traits.

The issue of interventions for individuals with depressive symptomatology engaging in antisocial behaviour seems to be overlooked in much of the research despite the presence of a diagnostic category in ICD-10. The findings from the current study would suggest interventions for externalising behaviours could include components to increase self-esteem and reduce rumination (with a focus on both anger and sadness) whilst potentially including a component to reduce feelings of shame (both through avoidance and negative self-appraisal). These characteristics or the interaction of them may be a factor in maintaining externalising behaviour. The process of rumination and shame can impact on an individual's self-esteem and externalising behaviour may serve as an emotional regulation strategy, to gain peer respect or to alleviate the feelings of worthlessness, inferiority or social exclusion.

A key technique which can address rumination is decentering which can be used in Mindfulness to target cognitive reactivity and rumination. Individuals can learn to be more aware of their thoughts and feelings and to disengage from escalating and self-perpetuating cycles of ruminative thinking and to not respond to these thoughts. Similarly both Dialectical Behaviour Therapy (Linehan, 1993a,b) and Compassion Focused Therapy (Gilbert, 2010) focus on reducing shame through techniques such as mindfulness. Additionally, Compassion Focused Therapy and Compassionate Mind training (Gilbert & Procter, 2006) use techniques such as imagery, letter writing and chair work to encourage individuals to be more compassionate towards themselves and has been found to be effective in reducing shame and depression.

6.5 Limitations

The study relied solely on self-report with the exception of the FEEST. This method of data collection could be subject to bias such as social desirability or fear of

consequences (due to the nature of questions on antisocial behaviour) and means that there was little method variance. However, the sample consisted of adolescents and studies have shown that this age group can adequately and reliably complete self-report measures (Essau et al, 2006; Frick et al, 2003; Kamphaus & Frick, 1996). It may have been beneficial to get multi-informant information (i.e. parents or teachers) on behavioural difficulties such as those measured by the SDQ or how they function at school in terms of peer relations. Information on social relationships may have been particularly useful in relation to callous unemotional traits or low self-esteem. However, Kamphaus and Frick (1996) found that the validity of self-report increases in adolescents whilst it decreases in parent and teacher reports. This suggests the adolescent is best placed to comment on their psychopathological symptomatology and engagement in antisocial behaviour, particularly as this may not be evident to others.

As previously mentioned, the study used an antisocial sample of adolescents excluded from mainstream school and therefore may have lower level behavioural problems than the clinical or forensic samples often used in research. Similarly other studies may have looked at adolescents high in callous unemotional traits rather than antisocial adolescents with a wide range of scores on the measure of callous unemotional traits. A sample with more severe behavioural problems and delinquency from a Young Offenders Team or Young Offender Institute may have provided different results, particularly if they were scoring higher on depressive symptomatology, callous unemotional traits or overall more severely antisocial in nature.

A review of the questionnaires used may yield more comprehensive measures. For example, this study used a rumination scale that comprised of separate scales measuring sadness or angry rumination. There was no difference between the rumination subscales and their association with depressive symptomatology, however anger rumination was the stronger predictor in the regression analysis. As the two subscales of rumination were highly correlated with each other, there may be an argument for using just one scale or a combined score of sadness and anger rumination. However, when looking at the association with callous unemotional

traits, only sadness rumination was related reinforcing the view that separate scales may have added value when looking at relationships other than depression. Looking at the original partial correlations, the association between callous unemotional traits (whilst controlling for depressive symptomatology) and sadness rumination was -.271 compared to -.098 for anger rumination. In depressive symptomatology (whilst controlling for callous unemotional traits) the association with sadness rumination was .461 and .423 for anger rumination. Additionally, a t-test showed that participants scored significantly higher on anger rumination than sadness rumination. This suggests the subscales were tapping into different aspects of general ruminative processes that would have been provided by a combined score of rumination.

The tasks used (with the exception of the FEEST) were verbal tasks relying on a sufficient level of reading ability. The participants' average score on the measure of verbal IQ was in the borderline range indicating that some participants may have additional learning needs and may have had difficulty with the test materials and indeed VIQ was significantly positively associated with the uncaring subscale of the ICU and recognition of sad emotion and negatively with both subscales of shame in particular. The researcher did offer additional support to those who requested it or appeared to be struggling; however there may have been participants that did not receive this support who could have benefited from it.

There were limitations of using the FEEST to measure emotional recognition. Fairchild et al (2009) argues that forced choice categorisation of emotions lacks ecological validity. Static posed photos of a white middle aged man may result in different processing to the more dynamic processing of emotions in everyday life. However, the FEEST does employ graded intensity of emotions which is more akin to the more subtle variations of expression in real life and has been used successfully in other studies (Blair & Coles; Blair et al, 2001; Fairchild et al, 2009; see Marsh & Blair, 2008 for a review). Again the non-significant results may not be due to the FEEST but rather the difference in participants and potentially lower callous unemotional traits in the adolescents in the current study. It may be that clinically referred or forensic samples are high in callous unemotional traits or

splitting the sample into high and low in these traits may have replicated previous findings more successfully.

This study used a correlational design, however a larger sample would have allowed the sample to be split and analysed by a group based profile rather than as continuous variables. For example, into mutually exclusive groups of high callous unemotional traits, high depressive symptoms, those high in both or those low in both. This would have allowed analysis of group interaction effects such as the interaction of depressive symptomatology and callous unemotional traits. Additionally it may have provided additional information as in the current sample, individuals may have been high on both aspects which may affect the characteristics of the other (however, the correlation was low - .130). Additionally a control group of individuals with depressive symptomatology or callous unemotional traits in the absence of antisocial behaviour may have provided further information on the cognitive and affective features and aetiological explanations of these traits alone and whether they present differently when paired with antisocial behaviour.

6.6 Suggestions for future research

With a few exceptions, studies of facial recognition in antisocial populations has been restricted to looking at facial recognition in individuals with callous unemotional traits. Fairchild et al (2009) examined the differences in emotional recognition difficulties in child versus late onset finding those individuals in the former group had more pronounced difficulties. Schepman et al (2012) have been the only study before the current research to examine emotional recognition in individuals with comorbid depression. They found this group to have biases rather than absolute deficits. The current study did not find significant deficits in those with depressive symptomatology but a trend towards superior recognition of fearful expressions. Further research could seek to clarify the area of emotional recognition in adolescents with comorbid conduct problems and depressive symptomatology. For example, taking into account hits and false alarms to calculate a bias rather than an overall number correct score.

Further research in this area may well find that individuals with depressive symptomatology do not have emotional recognition deficits and this would be beneficial in further distinguishing these individuals from others with conduct problems, particularly those high in callous unemotional traits. Cognitive bias in the recognition of facial expressions would fit with the general nature of bias within depression in contrast to the neurocognitive deficits which are characteristic of callous unemotional traits.

This study both replicated, and demonstrated some interesting differences between individuals engaging in externalising behaviour with depressive symptomatology or high in callous unemotional traits. It also highlighted the significance of low self-esteem in both these features of problem behaviour. The next step may be to see if interventions that have components that target these characteristics are helpful in personalising treatments and enhancing their efficacy. Screening individuals in assessment for depressive symptomatology and callous unemotional traits would allow specific components of treatment that are pertinent to the individual's needs to be used in interventions. For example, a module on enhancing self-esteem, one on targeting rumination and potentially one module on reducing feeling of shame for those with depressive symptomatology in contrast to modules on enhancing guilt and empathy, via increasing emotion recognition, and self-esteem in those with callous unemotional traits. Perhaps if measures related to these characteristics were collected alongside measures of antisocial behaviour over the course of treatment it may be able to detect whether these modular processes were associated with outcomes.

Further analysis investigating how these characteristics relate to antisocial behaviour and specific delinquent behaviour would be interesting. For example, breaking down delinquency into aggression (physical/verbal/relational) or reactive/proactive, rule violations, theft and deceit and property destruction. This would provide further information on the predictors or characteristics that could be targeted in specific antisocial behaviour.

The current study made no predictions regards to gender differences and therefore this was not explored other than controlling for it within the regression analysis. It would potentially be beneficial to look at whether different characteristics predict depressive symptomatology, callous unemotional traits or externalising behaviour in males and females. This is especially important as gender differences might be expected to be higher in depression and empathy deficits may be expected to be higher in males with callous unemotional traits.

6.7 Conclusions

Both depressive symptomatology and callous unemotional traits are common within individuals with externalising behaviours. The low correlation between the two supports the suggestion of heterogeneity with potentially different causal and maintaining factors contributing to their behaviour. Both ICD-10 and DSM-V recognise this comorbidity and have additional diagnostic categories for the presence of comorbid depressive symptomatology and callous unemotional traits respectively when diagnosing Conduct Disorder.

With the exception of low self-esteem which is a characteristic of both depressive symptomatology and callous unemotional traits in individuals with externalising behaviour, other cognitive and affective characteristics investigated appear to differentiate between the individuals. Rumination, low self-esteem and potentially shame are characteristic of depressive symptomatology and low self-esteem and lack of guilt and empathy are characteristic of individuals high on callous unemotional traits. Overall, it was low self-esteem that predicted delinquency and as this was a prominent feature of both depressive symptomatology and those high in callous unemotional traits, it appears to be a key focus of treatment.

Personalising interventions and targeting the characteristics shown to have an association with a depressive or callous unemotional presentation, may be more effective in the treatment of externalising disorders than simply offering an approach more universal in nature.

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8 Appendices

8.1 Appendix A: Letter of ethical approval

Laura Smith
Institute of Psychiatry
3rd Floor Addiction Sciences Building
4 Windsor Walk
Denmark Hill
London SE5 8AF

18 April 2012

Dear Laura

PNM/11/12-87 Investigating the differential role of mood and callous-unemotional traits on cognitive and affective processing in antisocial adolescents.

Review Outcome: Full Approval

Thank you for sending in the amendments/clarifications requested to the above project. I am pleased to inform you that these meet the requirements of the PNM RESC and therefore that full approval is now granted with the following provisos:

1. All Information Sheets and Consent Forms: State the date up to which participants can withdraw their data i.e. month and year.

Please ensure that you follow all relevant guidance as laid out in the King's College London Guidelines on Good Practice in Academic Research (http://www.kcl.ac.uk/college/policyzone/index.php?id=247).

For your information ethical approval is granted until 18 April 2015. If you need approval beyond this point you will need to apply for an extension to approval at least two weeks prior to this explaining why the extension is needed, (please note however that a full re-application will not be necessary unless the protocol has changed). You should also note that if your approval is for one year, you will not be sent a reminder when it is due to lapse.

Ethical approval is required to cover the duration of the research study, up to the conclusion of the research. The conclusion of the research is defined as the final date or event detailed in the study description section of your approved application form (usually the end of data collection when all work with human participants will have been completed), not the completion of data analysis or publication of the results. For projects that only involve the further analysis of pre-existing data, approval must cover any period during which the researcher will be accessing or evaluating individual sensitive and/or un-anonymised records. Note that after the point at which ethical approval for your study is no longer required due to the study being complete (as per the above definitions), you will still need to ensure all research data/records management and storage procedures agreed to as part of your application are adhered to and carried out accordingly.

If you do not start the project within three months of this letter please contact the Research Ethics Office.

Should you wish to make a modification to the project or request an extension to approval you will need approval for this and should follow the guidance relating to modifying approved applications: http://www.kcl.ac.uk/innovation/research/support/ethics/applications/modifications.aspx
The circumstances where modification requests are required include the addition/removal of participant groups, additions/removal/changes to research methods, asking for additional data from participants, extensions to the ethical approval period. Any proposed modifications should only be carried out once full approval for the modification request has been granted.

Any unforeseen ethical problems arising during the course of the project should be reported to the approving committee/panel. In the event of an untoward event or an adverse reaction a full report must be made to the Chair of the approving committee/review panel within one week of the incident.

Please would you also note that we may, for the purposes of audit, contact you from time to time to ascertain the status of your research.

If you have any query about any aspect of this ethical approval, please contact your panel/committee administrator in the first instance (http://www.kcl.ac.uk/innovation/research/support/ethics/contact.aspx). We wish you every success with this work.

With best wishes

Yours sincerely

Catherine Fieulleteau

Senior Research Ethics Officer

Cc: Dr Matthew Woolgar

8.2 Appendix B: Recruitment letter to PRU's

Department of Psychology
PO78 ASB
4 Windsor Walk, London, SE5 8AF

Dear X,

I'm writing to you to tell you about a study we are conducting within the Psychology department of Kings College for which we're approaching pupil referral units to participate. This study is part a doctoral research project and has been approved by the by King's College London Psychiatry, Nursing and Midwifery Research Ethics Subcommittee ref: PNM/11/12-87

Currently the treatment for adolescents with behaviour or conduct problems is often a generic anger management programme. Underlying the anger may be a variety of factors, including depressive symptomatology and difficulties with emotional understanding. These factors can affect how an individual processes and responds to information which may influence their engagement in problematic behaviour.

We are hoping to investigate the factors that may underlie behavioural problems to enable us to make interventions more meaningful and personalised. It is hoped furthering our understanding will lead to more efficacious treatments.

We are hoping to work with your centre and ask the adolescents that attend to participate in the study.

What will this involve?

- After obtaining parental consent, the researcher will come to the centre and give all adolescents a questionnaire to complete in a group format. This will take approximately 45 minutes.
- The researcher will then arrange time slots for the adolescents to complete a second stage of the study which involves scenarios, puzzles and tests. For example, a scenario will be read and participants are asked how they would respond, how they would rate suggested responses from the researcher, they will do a short computer task which involves identifying different emotions and a picture naming task. This is an individual session and will take around 1 hour.

Why should we participate?

- Furthering our knowledge in relation to adolescents with behavioural problems will greatly improve current interventions offered to those referred to Psychology services. Children may be treated as simply angry, when there are other factors underlying this behaviour such as low mood or emotional processing difficulties

which are making it difficult for them to process and respond to information in the same way as other adolescents.

- To thank you for your participation, we can offer you and your staff team a presentation on a psychological/mental health issue of your choice. For example, a presentation on ADHD and how best to respond to children with this diagnosis.

- To thank the adolescents for their participation, we will be offering them a £10 gift voucher for a high street shop.

I will contact you within 2 weeks to discuss the project in more detail and answer any questions you may have. I am also happy to arrange a meeting to come to your centre to discuss the research in more detail. You are under no obligation to reply to this letter, however if you choose to, participation in this research is voluntary and you may withdraw at any time.

Thank you for taking the time to consider this proposal. I look forward to speaking with you.

Yours sincerely,

Laura Smith — Dr Matthew Woolgar

Trainee Clinical Psychologist — Clinical Psychologist

8.3 Appendix C: Centre Information sheet

INFORMATION SHEET FOR CENTRES

REC Reference Number: PNM/11/12-87

Investigating mood and emotional understanding in adolescents with behaviour problems

We would like to invite your centre to participate in this postgraduate research project. Before you decide whether you want to take part, it is important for you to understand why the research is being done and what your centre's participation will involve. Please take time to read the following information and ask us if there is anything that is not clear or if you would like more information.

Who we are?

I am a trainee clinical psychologist studying for my doctorate at Kings College London. Before qualifying as a Psychologist, I am required to conduct research in a clinical area. I am interested in researching how low mood and/or poor emotional understanding can effect adolescents' engagement in antisocial behaviour.

What is the project about?

The project is researching how low mood and/or poor emotional understanding can effect adolescents' engagement in antisocial behaviour. Developing our understanding of these different factors will help us to improve support and treatment options for children and adolescents referred to clinical services for emotional and behavioural problems.

Why we need you to participate

Currently adolescents referred for conduct problems are treated with a more 'universal' approach which assumes that they are engaging in antisocial behaviour for similar reasons. Our hope for this research is to be able to distinguish between adolescents who may have low mood and those that have poor emotional understanding and how this affects their cognitive and affective functioning and engagement in antisocial behaviour. If differences are found, support and treatment could be personalised and therefore more meaningful to the adolescents which would increase their efficacy.

Possible benefits

To the centre: We can offer you and your staff team a presentation on a psychological/mental health issue of your choice. For example, a presentation on ADHD or

conduct problems and how best to respond to children with this diagnosis, anxiety or depression in adolescents, substance misuse, autism and communication disorders.

To participants: Although no immediate benefits are expected, the information gathered from the study will help to inform support and treatments for adolescents in the future. A summary of the results will be sent to all participating centres for participants to access. All adolescents will receive a £10 high street shop voucher.

In general: By furthering our understanding of the processing difficulties some adolescents face, this can help inform and plan support and treatment. By targeting specific difficulties support and treatments will be more personalised and therefore more meaningful to the adolescent. This will make treatments more effective.

What next?

We will meet with a member of staff from the centre to discuss the project in more detail. If you decide to participate, we will give all adolescents and their parents an information sheet and consent form to inform them of the study and invite the adolescents to participate. To participate in the study, both consent from the parents and consent/assent from the children will be required.

We will then agree a time to come to the centre and ask the adolescents to complete a questionnaire. This can be completed in a group format within a class. This will take approximately 45 minutes to complete. On a separate day, we will arrange to test adolescents on a 1-to-1 basis. They will be asked to answer some questions to different scenarios and do some puzzles and tasks. For example, a scenario will be read and they will be asked how they would respond, how they would rate suggested responses from the researcher, they will do a short computer task which involves identifying different emotions and a picture naming task. This will take approximately 1 hour. On completion of this session, all participants will receive a £10 voucher for a high street shop.

Please feel free to contact the researcher if you have any questions or to arrange a meeting to discuss this research further.

Laura Smith

Trainee Clinical Psychologist

Department of Psychology

PO Box 078 ASB

4 Windsor Walk

London, SE5 8AF

Email: laura.smith@kcl.ac.uk

Tel: 0207 848 0733

Mobile: 07445 599 485

8.4 Appendix D: Parent Information sheet

INFORMATION SHEET FOR PARENTS

REC Reference Number: PNM/11/12-87

YOU WILL BE GIVEN A COPY OF THIS INFORMATION SHEET

Title: Investigating mood and emotional understanding in adolescents with behaviour problems

We would like to invite your child to participate in this postgraduate research project. Your child should only participate if they want to; choosing not to take part will not disadvantage them in any way. Before you decide whether you want your child to take part, it is important for you to understand why the research is being done and what your child's participation will involve. Please take time to read the following information carefully and discuss it with others if you wish. Ask us if there is anything that is not clear or if you would like more information.

Aims of the research and possible benefits

The aim of this study is to gain a better understanding of how low mood and/or difficulties with emotional understanding can affect how adolescents' process and respond to information. Difficulties in processing certain information may be linked to engagement in problematic behaviours.

By furthering our understanding of the processing difficulties some adolescents face, this can help inform and plan support for them. Support targeting specific difficulties will be more personalised and therefore more meaningful to the adolescent. This will make supportive treatments more effective.

Who are we asking to participate?

We are asking all adolescents that attend Pupils Referral Units in some of London's boroughs to participate in the study.

What will happen if your child agrees to take part?

Your child does not have to participate and it is up to you both to decide whether your child would like to take part or not. If your child does decide to take part you will be given this information sheet to keep and be asked to sign a consent form. If you sign the consent form, this means that you understand the project, and that you are willing for your child to take part. If your child decides to take part they are still free to withdraw at any time and

without giving a reason. To participate in the study both parental consent and consent/assent from your child is required.

Once your child agrees to take part, they will be asked to attend a group session at their school with their classmates to complete a questionnaire. This will take approximately 45 minutes to complete. On a separate day, they will be invited to attend a session at their school where they will be asked to answer some questions to different scenarios and do some puzzles and tasks. For example, a scenario will be read and your child will be asked how they would respond, how they would rate suggested responses from the researcher, they will do a short computer task which involves identifying different emotions and a picture naming task. This will take approximately 1 hour. On completion of this session, your child will receive a £10 voucher for a high street shop.

Any risks

It is unlikely that there are any risks in taking part in this project. Sometimes, answering questions about how you feel can be upsetting, we will help them to access appropriate support if this situation arises. All the information they tell us is private and confidential. If they tell us something that means that they are at risk of harm (for example if someone is threatening them, or if they want to hurt themselves), then we would encourage them to seek appropriate support and may need to pass this information onto their teacher. Safeguarding procedures may have to be employed.

Possible benefits

Although no immediate benefits are expected, the information gathered from the study will help to inform and plan support for adolescents in the future. A summary of the results will be sent to all participating centres for your child to access.

Arrangements for ensuring anonymity and confidentiality

We will keep the original paper copies of the questionnaires that your child fills out. These will be locked away securely and only the study team will have access to them. All data will be entered into a computer database so that we can analyse the results. Neither the questionnaire or the data stored on the computer will have your child's name on it. They will have an ID number. You can withdraw your child's data up to 31st April 2013 before the final project report is written. All data will be securely stored at King's College London for a set period of time after completion of the study.

Risks of criminal disclosure

There will be some questions in the questionnaire on engagement in criminal activity. This information will be kept confidential. If your child was to discuss with the researcher about a current criminal offence under investigation or make a threat to engage in a specific future criminal offence, this would have to be reported. This information would be passed onto the head teacher of their unit and in the case of an offence currently being investigated, the police. All information on the questionnaire will remain confidential.

Name and contact details of the researcher:

Laura Smith
Trainee Clinical Psychologist
Department of Psychology
PO Box 078 ASB
4 Windsor Walk, London, SE5 8AF
Email: laura.smith@kcl.ac.uk
Tel: 0207 848 0733
Mobile: 07445 599 485

If this study has harmed your child in any way you can contact King's College London using the details below for further advice and information:

Dr Matt Woolgar
Clinical Psychologist
Michael Rutter Centre
Institute of Psychiatry
Denmark Hill, London, SE5 8AZ
Email: matt.woolgar@kcl.ac.uk
Tel: 020 3228 3381

8.5 Appendix E: Child Information sheet

KING'S College LONDON
University of London

Hi, my name is Laura and I am doing research on how mood and emotional understanding can affect behaviour in young people. Please have a look at this leaflet and ask me if you have any questions.

What is the study about?

To find out more about how low mood and difficulties with emotional understanding can affect how we understand information. If we have trouble understanding information, we may find we get into trouble more.

Why have I been chosen?

I am asking all students at Pupil Referral Units to do the study. You are very important and with your help we can learn more about the difficulties young people have and how this may lead them to get into trouble with their behaviour.

What will I have to do?

I will be asking you to help 2 times. Both times will be at your school.

1st Time:
I will ask you to complete a questionnaire. You will so this with other people in your class. It will take about 45 minutes.

2nd Time:
I will ask you some more questions and get you to do some tasks on a computer. It will take about 1 hour.

You will receive a £10 voucher to thank you.

Will people know my answers?

I will know your answers but not your name – we will put a number on all the questionnaires so no one will know who you are!

Do I have to do it?

You do not have to do it. If you choose to take part, you do not need to answer any questions you don't want to.

You can stop at any time, and you can pull out of the study up until 31st April 2013 without saying why.

Will the things I tell you be kept secret?

This is very important: No one will know who you are, **but** if you tell me something that indicates that you, or another child, are at risk of quite serious harm then I may need to tell somebody else to keep you safe. **Also**, except for what's in the questionnaire, if you tell me that you have done something illegal in the past that you have not told anybody else before, then I need to tell somebody else, because your parents/guardians, teacher or the police may need to know about it.

If you are under 18 and would like to take part, then we will need your parents' consent. We have sent them information on the study and will need them to say you can do the study.

Please feel free to contact me with any questions:

Laura Smith

Telephone number: 07445 599 485

Email address: laura.smith@kcl.ac.uk

If you feel this study has harmed you in any way you can contact King's College London using the details below:

Supervisor's name: Dr Matt Woolgar

Telephone number: 020 3228 3381

8.6 Appendix F: Parent consent form

CONSENT FORM FOR PARENT'S OF PARTICIPANTS IN RESEARCH STUDIES

Please complete this form after you have read the Information Sheet and/or listened to an explanation about the research.

KING'S College LONDON

Title of Study: Investigating mood and emotional understanding in adolescents with behaviour problems

King's College Research Ethics Committee Ref: PNM/11/12-87

Thank you for considering taking part in this research. The person organising the research must explain the project to you before you agree to take part. If you have any questions arising from the Information Sheet or explanation already given to you, please ask the researcher before you decide whether to join in. You will be given a copy of this Consent Form to keep and refer to at any time.

Please tick or initial

1. I confirm that I have read and understand the information sheet for the above study and have had the opportunity to ask questions. ☐

2. I understand that if I decide at any time during the research that I no longer wish my child to participate in this project, I can notify the researchers involved and withdraw them from it immediately without giving any reason. Furthermore, I understand that I will be able to withdraw my child's data up to 31st April 2013. ☐

3. I consent to the processing of my child's personal information for the purposes explained to me. I understand that such information will be handled in accordance with the terms of the Data Protection Act 1998. ☐

Parent's Statement:

I _____ **(Print name)**

agree that the research project named above has been explained to me to my satisfaction and I give my permission for my child to take part in the study. I have read both the notes written above and the Information Sheet about the project, and understand what the research study involves.

Parent's Signature: _____ **Date:** _____

8.7 Appendix G: Adolescent consent forms

CONSENT FORM FOR PARTICIPANTS IN RESEARCH STUDIES

Please complete this form after you have read the Information Sheet and/or listened to an explanation about the research.

Title of Study: Investigating mood and emotional understanding in adolescents with behaviour problems

King's College Research Ethics Committee Ref:

Thank you for considering taking part in this research. The person organising the research must explain the project to you before you agree to take part. If you have any questions arising from the Information Sheet or explanation already given to you, please ask the researcher before you decide whether to join in. You will be given a copy of this Consent Form to keep and refer to at any time.

	Please tick or initial
1. I confirm that I have read and understand the information sheet for the above study and have had the opportunity to ask questions.	☐
2. **I consent to the first phase of the study which involves completing the questionnaire**.	☐
3. I understand that if I decide at any time during the research that I no longer wish to participate in this project, I can notify the researchers involved and withdraw from it immediately without giving any reason. Furthermore, I understand that I will be able to withdraw my data up to the point of publication.	☐
4. I consent to the processing of my personal information for the purposes explained to me. I understand that such information will be handled in accordance with the terms of the Data Protection Act 1998.	☐

Participant's Statement:

I _____

agree that the research project named above has been explained to me to my satisfaction and I agree to take part in the study. I have read both the notes written above and the Information Sheet about the project, and understand what the research study involves.

Signed **Date**

Researcher's Statement:

I _____

Confirm that I have carefully explained the nature, demands and any foreseeable risks (where applicable) of the proposed research to the participant.

CONSENT FORM FOR PARTICIPANTS IN RESEARCH STUDIES

Please complete this form after you have read the Information Sheet and/or listened to an explanation about the research.

Title of Study: Investigating mood and emotional understanding in adolescents with behaviour problems

King's College Research Ethics Committee Ref:

Thank you for considering taking part in this research. The person organising the research must explain the project to you before you agree to take part. If you have any questions arising from the Information Sheet or explanation already given to you, please ask the researcher before you decide whether to join in. You will be given a copy of this Consent Form to keep and refer to at any time.

Please tick or initial

1. I confirm that I have read and understand the information sheet for the above study and have had the opportunity to ask questions. ☐

2. I consent to the second stage of the study which involves completing scenarios, tasks and puzzles. ☐

3. I understand that if I decide at any time during the research that I no longer wish to participate in this project, I can notify the researchers involved and withdraw from it immediately without giving any reason. Furthermore, I understand that I will be able to withdraw my data up to the point of publication. ☐

4. I consent to the processing of my personal information for the purposes explained to me. I understand that such information will be handled in accordance with the terms of the Data Protection Act 1998. ☐

Participant's Statement:

I _____

agree that the research project named above has been explained to me to my satisfaction and I agree to take part in the study. I have read both the notes written above and the Information Sheet about the project, and understand what the research study involves.

Signed Date

Researcher's Statement:

I _____

Confirm that I have carefully explained the nature, demands and any foreseeable risks (where applicable) of the proposed research to the participant.

8.8 Appendix H: Questionnaire (stage 1)

Department of Psychology
PO78 ASB
4 Windsor Walk, London, SE5 8AF

KING'S College LONDON
University of London

Questionnaire

Instructions: Please read all questions carefully and think about which answer best describes you. Answer all questions as honestly as possible; there is no right or wrong answer. Ask the researcher if you have any questions.

About me Male ☐ Female ☐ Age: _____

Please circle the letter that best describes your ethnicity:

A. White - British
B. White - Other
C. Mixed – White and Black African
D. Mixed – White and Black Caribbean
E. Mixed – White and Asian
F. Mixed other
G. Asian or Asian British – Indian
H. Asian or Asian British - Pakistani
I. Asian or Asian British –Bangladeshi
J. Asian or Asian British – Other
K. Black or Black British – Caribbean
L. Black or Black British – African
M. Black or Black British – Other
N. Chinese
O. Other _____
P. Not Known

About my behaviour

Please indicate how many times you have participated in the following behaviours **during the last year**.

These questions are about things that have happened and things that you may have done in the last year. You are reminded that all your responses are strictly confidential

1. During the last year how often did you do these things at school…? (tick ONE box on EVERY line)

		Most days	At least once a week	Less than once a week	Hardly ever or never
a.	Arrive late for classes……	☐	☐	☐	☐
b.	Fight in or outside the class……	☐	☐	☐	☐
c.	Refuse to do homework or class work……	☐	☐	☐	☐
d.	Be cheeky to a teacher……	☐	☐	☐	☐
e.	Use bad or offensive language……	☐	☐	☐	☐
f.	Wander around school during class time……	☐	☐	☐	☐
g.	Threaten a teacher……	☐	☐	☐	☐
h.	Hit or kick a teacher……	☐	☐	☐	☐
i.	Cheat doing homework or tests……	☐	☐	☐	☐
j.	Purposely damage or destroy things belonging to the school……	☐	☐	☐	☐

2. **<u>During the last year</u>, how often did you do each of these things…?** (tick ONE box on EVERY line)

		Most days	At least once a week	Less than once a week	Never
a.	Yelled or screamed at your mother to her face…..	☐	☐	☐	☐
b.	Hit or slapped your mother……	☐	☐	☐	☐
c.	Yelled or screamed at your father to his face……..	☐	☐	☐	☐
d.	Hit or slapped your father……..	☐	☐	☐	☐
e.	Returned home later than when your parents told you to be in by…..……..	☐	☐	☐	☐
f.	Stayed overnight elsewhere when told by your parents to return home …….	☐	☐	☐	☐

3. **<u>During the last year</u> at school, did you skip or skive school?**

☐ Yes – **answer questions in box below** ☐ No – **go to next question**
↓

a. **How many times did you do this in the last year?** (tick ONE box only)

☐ Once ☐ Twice ☐ 3 times ☐ 4 times ☐ 5 times

☐ Between 6 and 10 times ☐ More than 10 times

b. **What is the longest single period you skived for in the last year?**

☐ Part of a day ☐ 1 or 2 days ☐ 3 to 5 days ☐ More than one week

4. **<u>During the last year</u>, have you run away from home for at least one night without your parents knowing where you were?**

☐ Yes – **answer questions in box below** ☐ No – **go to next question**
↓

a. **How many times did you do this in the last year?** (tick ONE box only)

☐ Once ☐ Twice ☐ 3 times ☐ 4 times ☐ 5 times

☐ Between 6 and 10 times ☐ More than 10 times

b. **What is the longest single period you have run away from home for?**

☐ 1 or 2 days ☐ Up to 1 week ☐ Up to 2 weeks ☐ More than 2 weeks

5. **<u>During the last year</u>, how often did you do each of these things to someone you know?** (DON'T include brothers or sisters) (tick ONE box on EVERY line)

		Never	Less than once a week	At least once a week	Most days
a.	Ignore them on purpose or leave them out of things……..	☐	☐	☐	☐
b.	Say nasty things, slag them or call them names……	☐	☐	☐	☐
c.	Threaten or hurt them…….	☐	☐	☐	☐
d.	Hit, spit or throw stones at them……..	☐	☐	☐	☐
e.	Get other people to do these things…….	☐	☐	☐	☐

6. **<u>During the last year</u>, did you write or spray paint on property that did not belong to you (e.g. a phone box, car, building or bus shelter)?**

☐ Yes – **answer question in box below** ☐ No – **go to next question**

↓

How many times did you do this in the last year? (tick ONE box only)

☐ Once ☐ Twice ☐ 3 times ☐ 4 times ☐ 5 times

☐ Between 6 and 10 times ☐ More than 10 times

7. **<u>During the last year</u>, did you steal money or something else from……**
(tick ONE box on EVERY line)

	No	Once	Twice	3 times	4 times	5 times	Between 6 and 10 times	More than 10 times
a. ……Home	☐	☐	☐	☐	☐	☐	☐	☐
b. …..School	☐	☐	☐	☐	☐	☐	☐	☐
c. ……A shop or a store	☐	☐	☐	☐	☐	☐	☐	☐

8. **<u>During the last year</u>, did you use force, threats or a weapon to steal money or something else from somebody?**

☐ Yes – **answer question in box below** ☐ No – **go to next question**

↓

How many times did you do this in the last year? (tick ONE box only)

☐ Once ☐ Twice ☐ 3 times ☐ 4 times ☐ 5 times

☐ Between 6 and 10 times ☐ More than 10 times

9. **<u>During the last year</u>, did you break into a car or van to try and steal something out of it?**

☐ Yes – **answer question in box below** ☐ No – **go to next question**

↓

How many times did you do this in the last year? (tick ONE box only)

☐ Once ☐ Twice ☐ 3 times ☐ 4 times ☐ 5 times

☐ Between 6 and 10 times ☐ More than 10 times

10. **<u>During the last year</u>, did you ride in a stolen car or van or on a stolen motorbike?**

☐ Yes – **answer question in box below** ☐ No – **go to next question**

↓

How many times did you do this in the last year? (tick ONE box only)

☐ Once ☐ Twice ☐ 3 times ☐ 4 times ☐ 5 times

☐ Between 6 and 10 times ☐ More than 10 times

11. **<u>During the last year</u>, did you break into a house or building to steal something?**

☐ Yes – **answer question in box below** ☐ No – **go to next question**

↓

How many times did you do this in the last year? (tick ONE box only)

☐ Once ☐ Twice ☐ 3 times ☐ 4 times ☐ 5 times

☐ Between 6 and 10 times ☐ More than 10 times

12. **<u>During the last year</u>, did you damage or destroy property that did not belong to you on purpose (e.g. windows, cars or street lights)?**

☐ Yes – **answer question in box below** ☐ No – **go to next question**

↓

How many times did you do this in the last year? (tick ONE box only)

☐ Once ☐ Twice ☐ 3 times ☐ 4 times ☐ 5 times

13. **<u>During the last year</u>, did you set fire or try to set fire to something on purpose (e.g. a school, bus shelter, house etc)?**

☐ Yes – **answer question in box below** ☐ No – **go to next question**

↓

How many times did you do this in the last year? (tick ONE box only)

☐ Once ☐ Twice ☐ 3 times ☐ 4 times ☐ 5 times

☐ Between 6 and 10 times ☐ More than 10 times

14. **<u>During the last year</u>, did you use a weapon to protect yourself or in a fight?**

☐ Yes – **answer question in box below** ☐ No – **go to next question**

↓

How many times did you do this in the last year? (tick ONE box only)

☐ Once ☐ Twice ☐ 3 times ☐ 4 times ☐ 5 times

☐ Between 6 and 10 times ☐ More than 10 times

15. **<u>During the last year</u>, did you hurt or injure any animals or birds on purpose?** (DON'T include insects)

☐ Yes – **answer question in box below** ☐ No – **go to next question**

↓

How many times did you do this in the last year? (tick ONE box only)

☐ Once ☐ Twice ☐ 3 times ☐ 4 times ☐ 5 times

☐ Between 6 and 10 times ☐ More than 10 times

16. **<u>During the last year</u>, did you hit, kick or punch someone else on purpose (fight with them)?** (DON'T include brothers, sisters or play fighting)

☐ Yes – **answer question in box below** ☐ No – **go to next question**

↓

How many times did you do this in the last year? (tick ONE box only)

☐ Once ☐ Twice ☐ 3 times ☐ 4 times ☐ 5 times

☐ Between 6 and 10 times ☐ More than 10 times

About my personality

Please read each statement and decide how well it describes you. Mark your answer by ticking the appropriate box for each statement. Do not leave any statement unrated.

	Not at all true	Somewhat true	Very true	Definitely true
I express my feelings openly				
What I think is "right" and "wrong" is different from what other people think				
I care about how well I do at school or work				
I do not care who I hurt to get what I want				
I feel bad or guilty when I do something wrong				
I do not show my emotions to others				
I do not care about being on time				
I am concerned about the feelings of others				
I do not care if I get into trouble				
I do not let my feelings control me				
I do not care about doing things well				
I seem very cold and uncaring to others				
I easily admit to being wrong				
It is easy for others to tell how I am feeling				
I always try my best				
I apologize ("say I am sorry") to persons I hurt				
I try not to hurt others' feelings				
I do not feel remorseful when I do something wrong				
I am very expressive and emotional				
I do not like to put the time into doing things well				
The feelings of others are unimportant to me				
I hide my feelings from others				
I work hard on everything I do				
I do things to make others feel good				

About my mood and feelings

This form is about how you might have been feeling or acting recently. For each question, please check how much you have felt or acted this way in the **past 2 weeks**.

If a sentence was true about you most of the time, tick TRUE
If it was only sometimes true, tick SOMETIMES
If a sentence was not true about you, tick NOT TRUE

	Not True	Sometimes	True
I felt miserable or unhappy			
I didn't enjoy anything at all			
I felt tired I just sat around and did nothing			
I was very restless			
I felt I was no good any more			
I cried a lot			
I found it hard to think properly or concentrate			
I hated myself			
I was a bad person			
I felt lonely			
I thought nobody really loved me			
I thought I could never be as good as other kids			
I did everything wrong			

About my emotions

Please read each statement and decide how well it describes you. Mark your answer by ticking the appropriate box. Do not leave any statement unrated.

	Not at all true	Sometimes true	Definitely true
Your emotions are shallow and fake			
You brag a lot about your abilities, accomplishments or possessions			
You use or "con" other people to get what you want			
You tease or make fun of other people			
You act charming and nice to get things you want			
You get angry when corrected or punished			
You think you are better or more important than other people			

About my self-esteem

Below is a list of statements dealing with your general feelings about yourself. If you strongly agree, tick **Strongly Agree**. If you agree with the statement, tick **Agree**. If you disagree, tick **Disagree**. If you strongly disagree, tick **Strongly Disagree**.

	Strongly Agree	Agree	Disagree	Strongly Disagree
On the whole, I am satisfied with myself				
At times, I think I am no good at all.				
I feel that I have a number of good qualities.				
I am able to do things as well as most other people.				
I feel I do not have much to be proud of.				
I certainly feel useless at times.				
I feel that I'm a person of worth, at least on an equal plane with others.				
I wish I could have more respect for myself.				
All in all, I am inclined to feel that I am a failure.				
I take a positive attitude toward myself.				

About being angry

Please tick how often you do the following things when you are ***angry***

When I am angry…..	Never	Almost Never	Sometimes	Almost Always	Always
I keep thinking about past experiences that have made me angry.					
I have difficulty getting myself to stop thinking about how angry I am.					
I keep thinking about the reasons for my anger					
When I think about my anger, I become more angry.					
I get absorbed in thinking about why I am angry and find it difficult to think about other things					
I search my mind for events or experiences in my past that may help me understand my angry feelings.					
When something makes me angry, I turn this matter over and over again in my mind					
I tire myself out by thinking so much about myself and the reasons for my anger.					
Whenever I feel angry, I keep thinking about it for a while					
I think about certain events from the past and they still make me angry					
When I am angry, the more I think about it the angrier I feel					

About being sad

When I am sad, down or feeling blue….	Never	Almost Never	Sometimes	Almost Always	Always
I keep thinking about past experiences that have made me sad.					
I have difficulty getting myself to stop thinking about how sad I am.					
I keep thinking about the reasons for my sadness					
When I think about my sadness, I become more upset.					
I get absorbed in thinking about why I am sad and find it difficult to think about other things					
I search my mind for events or experiences in my past that may help me understand my sad feelings.					
When something makes me sad, I turn this matter over and over again in my mind					
I tire myself out by thinking so much about myself and the reasons for my sadness.					
Whenever I feel sad, I keep thinking about it for a while					
I think about certain events from the past and they still make me sad					
When I am sad, the more I think about it the sadder I feel					

Please tick how often you do the following things when you are ***sad***.

About being impulsive

Please read each statement and decide how well it describes you. Mark your answer by ticking the appropriate box. Do not leave any statement unrated.

	Not at all true	**Sometimes true**	**Definitely true**
You blame others for your mistakes			
You act without thinking of the consequences			
You get bored easily			
You do risky or dangerous things			
You do not plan ahead or you leave things until the “last minute”			

About my strengths and difficulties

For each item in the following box, please tick the box for Not true, Somewhat true, or Certainly true. It would help us if you answered all the items as best you can even if you are not absolutely certain or the items seem daft! Please give your answers on the basis of how things have been for you over **the last six months**.

	Not true	Somewhat true	Certainly true
I try to be nice to other people. I care about their feelings.			
I am restless. I cannot stay still for long.			
I get a lot of headaches, stomach-aches, or sickness.			
I usually share with others (food, games etc).			
I get very angry and often lose my temper.			
I am usually on my own. I generally play alone or keep to myself.			
I usually do as I am told.			
I worry a lot.			
I am helpful if someone is hurt, upset, or feeling ill.			
I am constantly fidgeting or squirming.			
I have one good friend or more.			
I fight a lot. I can make other people do what I want.			
I am often unhappy, down-hearted, or tearful.			
Other people my age generally like me.			
I am easily distracted. I find it difficult to concentrate.			
I am nervous in new situations. I easily lose confidence.			
I am kind to younger children.			
I am often accused of lying or cheating.			
Often children or young people pick on me or bully me.			
I often volunteer to help others (parents, teachers, children).			
I think before I do things.			
I take things that are not mine from home, school or elsewhere.			
I get on better with adults than with people my own age.			
I have many fears. I am easily scared.			
I finish the work I am doing. My attention is good.			
I often forget things or make careless mistakes in school/work and other			

About my emotions

The following are characteristics that may or may not apply to you. Please tick one answer for each statement to indicate how much you agree or disagree with each statement. Please answer as honestly as you can.

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
My friend's emotions don't affect me much.					
After being with a friend who is sad about something, I usually feel sad.					
I can understand my friend's happiness when she/he does well at something.					
I get frightened when I watch characters in a good scary movie					
I get caught up in other people's feelings easily					
I find it hard to know when my friends are frightened					
I don't become sad when I see other people crying					
Other people's feelings don't bother me at all.					
When someone is feeling 'down' I can usually understand how they feel.					
I can usually work out when my friends are scared					
I often become sad when watching sad things on TV or in films.					
I can often understand how people are feeling even before they tell me					
Seeing a person who has been angered has no effect on my feelings.					
I can usually work out when people are cheerful					
I tend to feel scared when I am with friends who are afraid.					
I can usually realise quickly when a friend is angry					
I often get swept up in my friend's feelings					
My friend's unhappiness doesn't make me feel anything					
I am not usually aware of my friend's feelings					
I have trouble figuring out when my friends are happy					

Thank you for completing the questionnaire. Please hand back to the researcher.

8.9 Appendix I: TOSCA-SP

TOSCA-SP

Below are situations that people are likely to encounter in day-to-day life, followed by several common reactions to those situations.

As you read each scenario, try to imagine yourself in that situation. Then indicate how likely you would be to react in each of the ways described. We ask you to rate all responses because people may feel or react more than one way to the same situation, or they may react different ways at different times.

For example:

A. You wake up early one Saturday morning. It is cold and rainy outside.

a) You would telephone a friend to catch up on news. 1---2---3---4---5
not likely very likely

b) You would take the extra time to read the paper. 1---2---3---4---5
not likely very likely

c) You would feel disappointed that it's raining. 1---2---3---4---5
not likely very likely

d) You would wonder why you woke up so early. 1---2---3---4---5
not likely very likely

In the above example, you would rate ALL of the answers by circling a number.

For answer (a) you would circle a "1" if you wouldn't want to wake up a friend very early on a Saturday morning -- so it would be not at all likely that you would do that.

For answer (b) you would circle a "5" if you almost always read the paper if you have time in the morning (very likely).

For answer (c) you would circle a "3" if it's about half and half. Sometimes you would be disappointed about the rain and sometimes you wouldn't -- it would depend on what you had planned.

And for answer (d) you would circle a "4" if it you would probably wonder why you had awakened so early.

Please do not skip any items -- rate all responses.

1. Imagine that you make plans to meet a friend for lunch. At 5 o'clock, you realize you stood your friend up.

	not likely very likely
How likely is it that it would weigh on your mind, thinking about what happened?	1---2---3---4---5
How likely is it that you would feel like a bad friend?	1---2---3---4---5
How likely is it that you'd feel so terrible you'd avoid their calls?	1---2---3---4---5
How likely is it that you'd make it up to your friend as soon as possible?	1---2---3---4---5
How likely is it that you would think: "My friend should have reminded me?"	1---2---3---4---5

2. While visiting a favourite relative, you accidentally break something you know is important to them.

	not likely very likely
How likely is it that you would think about it over and over, wondering if you should replace it?	1---2---3---4---5
How likely is it that you would feel like a loser?	1---2---3---4---5
How likely is it that you would either fix it or get someone else to?	1---2---3---4---5
How likely is it that you would think: "They should have put it in a safer place?"	1---2---3---4---5
How likely is it that you would feel so worthless that you'd throw out the broken pieces and try to forget that it ever happened?	1---2---3---4---5

3. Imagine that you make a mistake at school and find out another student is blamed for the error.

	not likely very likely
How likely is it that you would talk to your teacher and tell what really happened?	1---2---3---4---5
How likely is it that you would feel sorry and wonder if you should speak up?	1---2---3---4---5
How likely is it that you would feel like a complete failure?	1---2---3---4---5
How likely is it that you would feel so awful that you would not want to face the other student?	1---2---3---4---5
How likely is it that you would think the student probably deserved it?	1---2---3---4---5

4. You toss a bottle of water to your friend and it accidentally hits them in the face.

	not likely very likely
How likely is it that you would think maybe your friend needs to pay more attention?	1---2---3---4---5
How likely is it that you would apologize and make sure your friend feels better?	1---2---3---4---5
How likely is it that you would feel like a clumsy fool?	1---2---3---4---5
How likely is it that you'd feel like such a screw-up that you'd disappear at the first opportunity?	1---2---3---4---5
How likely is it that you would feel sorry and wish you had been more careful?	1---2---3---4---5

5. Imagine that you are cycling on your bike and hit a small animal.

	not likely very likely
How likely is it that you would think about it over and over, wondering if you could have avoided it?	1---2---3---4---5
How likely is it that you would think: "I'm a terrible person?"	1---2---3---4---5
How likely is it that you would cycle more carefully next time?	1---2---3---4---5
How likely is it that you'd feel pained and avoid cycling down that road?	1---2---3---4---5
How likely is it that you would think the animal shouldn't have been on the road?	1---2---3---4---5

6. You borrow your friend's bike and accidentally damage it.

	not likely very likely
How likely is it that you would worry about it and wonder if you should apologize?	1---2---3---4---5
How likely is it that you'd explain what happened to your friend and offer to pay for the damages?	1---2---3---4---5
How likely is it that you would feel like a horrible friend?	1---2---3---4---5
How likely is it that you'd return the bike but would feel too awful to say anything?	1---2---3---4---5
How likely is it that you'd think that the bike shouldn't damage so easily?	1---2---3---4---5

7. You are working with several other students on a project. You don't do your part and the project is late.

	not likely very likely
How likely is it that you'd feel so bad, you couldn't face the other students?	1---2---3---4---5
How likely is it that you would think that the others should have done more to help?	1---2---3---4---5
How likely is it that you'd feel like a failure?	1---2---3---4---5
How likely is it that you'd apologize to the other students and take responsibility?	1---2---3---4---5
How likely is it that it would bother you? You'd feel you let them down.	1---2---3---4---5

8. A group of tourists asks you for directions. After you have given them the directions, and they walk off, you realize the directions were wrong.

	not likely very likely
How likely is it that you would run after them and help them find their way?	1---2---3---4---5
How likely is it that you would feel awful for having misled them?	1---2---3---4---5
How likely is it that you'd just want to sink into the floor and disappear?	1---2---3---4---5
How likely is it that you'd think: "It's not my fault they don't know where they're going?"	1---2---3---4---5
How likely is it that you'd think: "I'm so stupid, I can't do anything right?"	1---2---3---4---5

9. You borrow money from a good friend, and promise to pay it back in a month. The next month you realize it will be a while before you can pay the friend back.

	not likely very likely
How likely is it that you'd feel really sorry about letting your friend down?	1---2---3---4---5
How likely is it that you would give up something you enjoy to save money to pay them back sooner?	1---2---3---4---5
How likely is it that you would feel like a loser?	1---2---3---4---5
How likely is it that you'd feel so bad it would be difficult just to be in the same room with them?	1---2---3---4---5
How likely is it that you'd think that it's your friend's fault for loaning money in the first place?	1---2---3---4---5

10. You are telling loud jokes at a party and say something that hurts a friend's feelings.

	not likely very likely
How likely is it that you would think: "My friend just doesn't have a sense of humor?"	1---2---3---4---5
How likely is it that you would apologize to them?	1---2---3---4---5
How likely is it that you'd feel bad about offending your friend? It would eat at you.	1---2---3---4---5
How likely is it that you'd slouch down in your chair and avoid eye contact for the rest of the night?	1---2---3---4---5
How likely is it that you'd feel like an idiot and wonder how you have any friends at all?	1---2---3---4---5

11. You forget to pick up your sibling from school one day. They wait and wait until finally the school calls you.

	not likely very likely
How likely is it that you would think that someone should have reminded you that day?	1---2---3---4---5
How likely is it that you would think: "I am a lousy brother/sister who doesn't deserve to be trusted to pick them up?"	1---2---3---4---5
How likely is it that you'd apologize and try to make it up to your sibling as soon as possible?	1---2---3---4---5
How likely is it that you'd feel very sorry for forgetting?	1---2---3---4---5
How likely is it that you would feel so bad, you'd avoid making eye contact with the teacher?	1---2---3---4---5

12. You forget it's your mother's birthday and haven't got her anything.

	not likely very likely
How likely is it that you'd arrange a special birthday dinner to make up for your forgetfulness?	1---2---3---4---5
How likely is it that you would think: "I am a disgusting person?"	1---2---3---4---5
How likely is it that you'd feel terrible every time your mobile rang but couldn't bring yourself to call her?	1---2---3---4---5
How likely is it that you would think that your mum expects too much?	1---2---3---4---5
How likely is it that you'd feel bad for disappointing her and would wonder how to make it up to her?	1---2---3---4---5

13. While staying at a friend's house, you leave the coffee-maker on and it catches on fire, causing a lot of damage.

not likely very likely

How likely is it that you'd think: "They really should have bought a coffee pot that shuts off automatically?" 1---2---3---4---5

How likely is it that you'd feel like a worthless idiot? 1---2---3---4---5

How likely is it that you'd feel so horrible that you'd cut off all contact with your friend? 1---2---3---4---5

How likely is it that you would offer to clean up and repair the damage? 1---2---3---4---5

How likely is it that you'd obsess over it, wishing you had been more careful? 1---2---3---4---5

14. You promise to take care of your friend's dog while your friend is gone, and the dog runs away.

not likely very likely

How likely is it that you'd feel so bad, you'd avoid the friend for months? 1---2---3---4---5

How likely is it that you'd think the dog should've been better trained? 1---2---3---4---5

How likely is it that you would feel upset for weeks because of the pain it caused your friend? 1---2---3---4---5

How likely is it that you would think: "I can't be trusted with anything important?" 1---2---3---4---5

How likely is it that you'd look for the dog for weeks, if necessary, to find it? 1---2---3---4---5

15. At a restaurant, you accidentally cause the waiter to trip, spilling food and drinks everywhere.

not likely very likely

How likely is it that you would feel so sorry, worrying about the waiter and the mess? 1---2---3---4---5

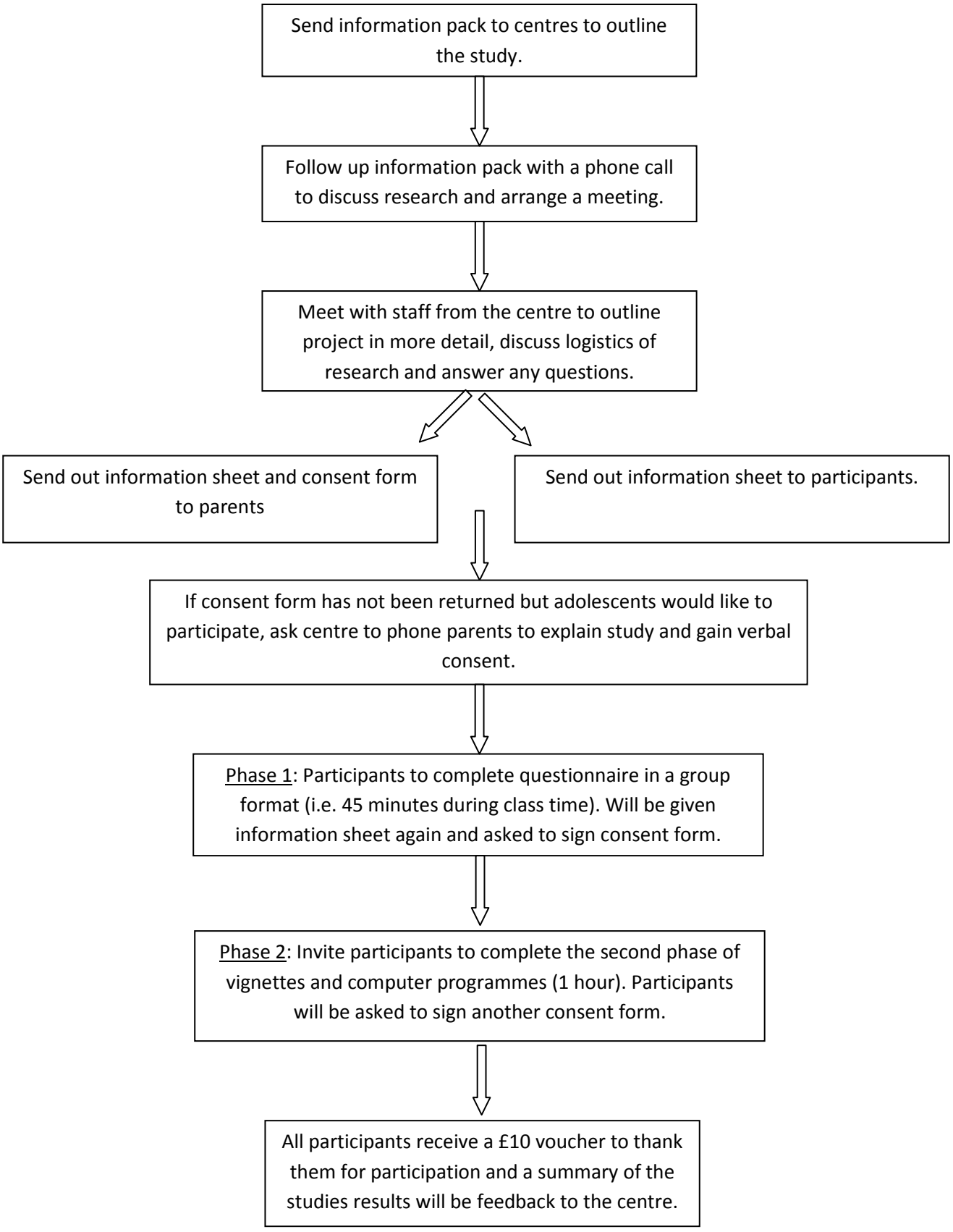
How likely is it that you would feel like everyone is watching you and laughing? 1---2---3---4---5

How likely is it that you'd feel so stupid you'd excuse yourself to go to the bathroom, and keep on walking out the door? 1---2---3---4---5

How likely is it that you would think: "That waiter should watch where he or she is going?" 1---2---3---4---5

How likely is it that you'd help the waiter clean up the mess? 1---2---3---4---5

8.10 Appendix J: Recruitment and testing procedure flow diagram



8.11 Appendix I: Results tables

	Stage 1 (*n* = 10)		Stage 2 (*n* = 58)		Test statistic
	M	***SD***	***M***	***SD***	
Age	14.30	1.703	14.47	.863	*t*(9.81) = -.301, *p* = .770
VIQ	-	-	81.11	12.744	
Gender	1.10	.316	1.38	.489	*Fisher's exact p* = .147
MFQ	5.30	5.618	6.29	5.157	*t*(66) = -.555, *p* = .581
ICU total	34.90	8.660	31.02	8.513	*t*(66) = 1.329, *p* = .188
SDQ total difficulties	16.10	4.954	15.31	5.548	*t*(66) = .422, *p* = .675
Total delinquency	14.60	6.293	13.78	5.768	*t*(66) = .412, *p* = .682

Table 1: Comparing the difference on demographics and main study variables between those who completed both stages compared to stage 1 only.

	N	%
White British	24	35.3
White Other	7	10.3
Mixed - White and Black African	4	5.9
Mixed - White and Black Caribbean	5	7.4
Mixed Other	2	2.9
Asian or Asian British - Indian	1	1.5
Asian or Asian British - Other	1	1.5
Black or Black British - Caribbean	8	11.8
Black or Black British - African	7	10.3
Black or Black British - Other	1	1.5
Other	8	11.8

Table 2: Participants' Ethnicity

	N	**%**
Male	45	66.2
Female	23	33.8
Aged 11	1	1.5
Aged 12	2	2.9
Aged 13	8	11.8
Aged 14	18	26.5
Aged 15	33	48.5
Aged 16	6	8.8

Table 3: Participants' gender and ages

	Mean	SD	Skew	Skew SE	Kurtosis	Kurtosis SE
Age	14.44	1.01	-.989	.291	1.279	.574
VIQ	81.11	12.74	-.077	.319	1.771	.628
MFQ	6.15	5.20	1.233	.291	1.015	.574
ICU total	31.59	8.58	-.149	.291	.814	.574
ICU Callous	10.09	4.58	.780	.291	1.007	.574
ICU Unemotional	8.71	3.20	-.112	.291	-.536	.574
ICU Uncaring	12.79	4.15	-.507	.291	.770	.574
Total empathy	63.88	9.25	-.426	.293	.399	.578
Affective empathy	30.99	6.36	-.369	.293	.176	.578
Cognitive empathy	32.90	4.50	-.513	.293	.300	.578
Self esteem	28.94	4.86	-.550	.291	.071	.574
Guilt (affect & cognition)	46.55	12.40	-.145	.304	-.637	.599
Guilt (reparative behaviour)	53.05	11.09	-.243	.304	-.524	.599
Shame (Negative self-appraisal)	34.26	11.99	.461	.304	-.490	.599
Shame (Avoidance)	28.56	10.09	.569	.304	-.257	.599
Externalisation of blame	35.32	9.85	.166	.304	-.284	.599
Anger Rumination	33.66	11.13	-.443	.291	-.186	.574
Sadness Rumination	29.66	12.34	.182	.291	-.581	.574
Anger	11.38	6.31	-.362	.316	1.125	.623
Fear	14.07	4.61	-.761	.316	-.129	.623
Sadness	17.10	3.09	-1.033	.316	.029	.623
Disgust	14.78	5.81	-1.215	.316	.456	.623
Surprise	18.31	2.13	-2.391	.316	6.641	.623
Happiness	19.28	1.46	-2.432	.316	6.165	.623
Emotion total	94.91	14.90	-.654	.316	-.096	.623
SDQ emotions	2.78	2.23	.742	.291	-.404	.574
SDQ conduct	4.43	1.97	.281	.291	.096	.574
SDQ hyper	5.62	2.17	-.129	.291	-.410	.574
SDQ peer	2.60	1.58	.218	.291	-.569	.574
SDQ prosocial	6.31	2.08	-.099	.291	-.838	.574
SDQ total difficulties	15.43	5.44	.339	.291	-.422	.574
Impulsivity	6.09	1.99	-.406	.291	-.029	.574
Narcissism	3.93	2.41	.164	.293	-.786	.578
Total delinquency	13.90	5.81	.040	.291	-.484	.574
Total CD behaviours	4.29	2.36	.355	.291	-.855	.574

Table 4: Distributions of main study variables and demographics

	Age (n=68 unless stated)	VIQ (n=57)	Gender (n=68 unless stated)
Age	1	-.203	.026
VIQ	-.203 (n=57)	1	-.241
Gender	.026	-.241	1
MFQ	.187	-.021	.137
ICU total	-.080	.114	-.049
ICU Callous	.130	-.187	-.096
ICU Unemotional	-.010	.092	.066
ICU Uncaring	-.301*	.353**	-.047
Total empathy	.040 (n=67)	-.087	.238 (n=67)
Affective empathy	.092 (n=67)	-.015	.258* (n=67)
Cognitive empathy	-.047 (n=67)	-.157	.123 (n=67)
Self esteem	-.173	.086	-.384**
Guilt (affect & cognition)	-.055 (n=62)	-.233	.090 (n=62)
Guilt (reparative behaviour)	-.095 (n=62)	-.126	.208 (n=62)
Shame (Negative self-appraisal)	-.011 (n=62)	-.433**	.120 (n=62)
Shame (Avoidance)	-.100 (n=62)	-.500**	.201 (n=62)
Anger Rumination	.024	-.150	.239
Sadness Rumination	-.007	-.152	.365**
Anger	.279* (n=58)	-.082	.151 (n=58)
Fear	.053 (n=58)	.156	-.159 (n=58)
Sadness	-.202 (n=58)	.357**	-.026 (n=58)
Disgust	.203 (n=58)	-.084	.252 (n=58)
Surprise	-.023 (n=58)	.186	.121 (n=58)
Happiness	-.159 (n=58)	.087	-.100 (n=58)
Emotion total	.153 (n=58)	.092	.115 (n=58)
Narcissism	.038 (n=67)	-.011	-.227 (n=67)
Impulsivity	-.182	.056	.015
Total delinquency	.008	-.091	.051

Table 5: Correlations between main study variables and demographics

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.
1.MFQ	1																	
2.ICU total	.145	1																
3. ICU uncaring	-.015	.740**	1															
4. ICU unemotional	.049	.624**	.260*	1														
5. ICU callous	.250*	.767**	.300*	.236	1													
6. Guilt (affect & cognition)[a]	.122	-.453**	-.386**	-.334**	-.296*	1												
7. Guilt (reparative behaviour)[a]	-.055	-.536**	-.443**	-.198	-.504**	.756**	1											
8. Shame (neg self-appraisal)[a]	.243	-.210	-.222	-.125	-.118	.733**	.490**	1										
9. Shame (avoidance)[a]	.260*	.075	-.048	-.066	.241	.469**	.167	.703**	1									
10 Self-esteem	-.499**	-.311**	-.124	-.257*	-.292*	-.019	.049	-.272*	-.336**	1								
11. Sadness rumination	.444**	-.176	-.126	-.190	-.084	.403**	.323*	.503**	.419**	-.342**	1							
12. Anger rumination	.436**	-.029	.036	-.036	-.061	.390**	.271*	.463**	.276*	-.292*	.712**	1						
13. Cognitive Empathy[b]	.125	-.211	-.074	-.027	-.310*	.260*	.373**	.344**	.181	-.018	.264*	.294*	1					
14. Affective empathy[b]	.161	-.311*	-.161	-.156	-.329**	.238	.237	.378**	.177	-.177	.481**	.277*	.435**	1				
15. Total Empathy[b]	.172	-.316**	-.147	-.121	-.377**	.292*	.347**	.429**	.211	-.130	.459**	.334**	.785**	.899**	1			
16. Fear[c]	.240	-.006	.006	-.020	-.002	-.011	.012	-.088	-.001	-.085	-.080	.172	.031	-.165	-.099	1		
17. Sadness[c]	.029	.213	.301*	.198	-.010	-.055	.029	-.206	-.041	-.160	.098	.206	.069	-.135	-.060	.337**	1	
18.Total delinquency	.360**	.276*	.253*	.105	.215	-.152	-.115	-.060	-.039	-.313**	.080	.172	.062	.014	.040	-.059	.188	1

* Correlation is significant at the 0.05 level (2 tailed)

** Correlation is significant at the 0.01 level (2 tailed)

Table 6: Main study variable correlations (pairwise comparisons, n=68 unless stated: [a] = 62, [b] = 67, [c] = 58)

Service Evaluation Project

Auditing the Cognitive Behavioural Therapy competences of a Child and Adolescent Mental Health Service Team

Supervisors: Martin Roberts, Psychotherapist and Kitty Kwan, Clinical Psychologist. Kaleidoscope Centre. Lewisham Children & Young People's Service. South London and Maudsley NHS Foundation Trust

Contents

Abstract

The aim of this project was to audit the level of self-rated Cognitive Behavioural Therapy (CBT) competences throughout a Child and Adolescent Mental Health Service (CAMHS) various teams. Clinicians working within a London CAMHS Service were asked to complete a questionnaire based on Roth and Pilling's (2007) CORE CBT Competences Framework. It utilises a self-assessment tool whereby clinicians are asked to rate their feelings of competence across the four domains of basic CBT competences, problem specific competences, specific CBT technique competences and metacompetences. Clinicians were also asked to comment on their view of CBT and their training and supervision needs. There was wide variability in the competency ratings of clinicians and many believed that they would benefit from further training, consultation and supervision. The results of this audit are particularly important given the introduction of child Improving Access to Psychological Therapies (IAPT) services and the need for clinicians to feel competent and able to deliver National Institute of Clinical Excellence (NICE) recommended CBT interventions. Recommendations based on the findings were made.

1 Introduction

1.1 CBT effectiveness

Much of the research into the development of cognitive behavioural models and their effectiveness is within the literature on psychopathology in adults, where there is a strong evidence base. The models have been taken from the adult literature and adapted for use with children presenting with the same disorders. Research into the effectiveness of CBT as applied and adapted to children and adolescents is ongoing.

1.1.1 Applicability of adult treatment models to children

Some research has focused on whether the assumptions of the adult models on which CBT is based can be applied to children and adolescents. For example, a key aspect of CBT for Obsessive Compulsive Disorder (OCD) is the thought-action-fusion

components. Both Libby et al. (2004) and Mather and Cartwright-Hatton (2004) have found this key aspect is relevant in using CBT to treat OCD in young people. Similarly, in social phobia the primary components of negative evaluation of one's social skills and negative interpretation of ambiguous situations have been shown to be key treatment targets in young people (Cartwright-Hatton et al., 2003; 2005, Vine & Stopa, 2008). In Generalised Anxiety Disorder, the key processes of meta-cognitive beliefs and attentional biases towards threat are the main treatment targets in both adult and young people suffering from this disorder (Cartwright-Hatton et al., 2004; Hadwin et al., 2006).

Hudson et al. (2009) found that CBT was significantly more effective in treating anxiety disorders in children compared to a group support attention condition (68.6% v 45.5%). They argued that the mechanisms and primary processes that CBT directly addresses result in a change in symptoms that non-specific therapy factors do not target.

1.1.2 Anxiety

Research studies and meta-analyses have shown that CBT is effective in treating both anxiety and depression in children and adolescents. In fact, CBT has been shown to be the most efficacious treatment for anxiety in young people (Butler et al, 2006; Barrett & Ollendick, 2004; Compton et al, 2004; Davis, May & Whiting, 2011; Hudson et al, 2009; In-Abon & Schneider, 2007; Ishikawa et al, 2007; James, Soler & Weatherall, 2005; Mattis & Pincus, 2004; Ollendick & King, 1998, 2000; Silverman, Pina & Viswesvaran, 2008). Despite the efficacy of CBT for anxiety in children and adolescents, one review found that between 20-60% of children are still symptomatic following treatment, reinforcing the need for research into optimising delivery of CBT in young people (Cartwright-Hatton et al, 2004). A wealth of studies and reviews examined this further to investigate the variability of the efficacy of CBT. One argument was that children are too young and have not developed the necessary cognitive skills to engage in CBT. This can be overcome by focusing more on the behavioural components of CBT or adapting the cognitive components to fit with the level of cognitive development of the child. Several

studies have found CBT for anxiety to be effective in children as young as preschool (Monga et al, 2009; Minde et al, 2010; Scheeringa et al, 2007).

Reynolds et al (2012) conducted a meta-analysis of 55 studies of psychological therapies for anxiety disorders in children and adolescents. They found similar effect sizes to previous studies (.65) and suggest that CBT for anxiety is effective when compared to both passive and active control conditions. They also looked at what adaptations can make CBT more effective for children and adolescents. They found that larger effect sizes were associated with disorder-specific CBT compared to generic CBT, individual treatment compared to group treatment, longer duration of treatment and age of child. Finally they found that parental involvement was not associated with increased effectiveness of treatment.

1.1.3 Depression

CBT has shown to have promising effects for treating depression in young people and is currently recommended by NICE (Clarke et al, 2001; Lewinsohn & Clarke, 1999; Michael & Crowley, 2002; NICE, 2005; Reinecke, Ryan & DuBois, 1998; Weisz et al, 2006). In earlier studies, CBT was shown to have large effect sizes, however, Weisz et al (2006) highlight in their paper the methodological weaknesses with many of these studies. They completed a more methodologically stringent meta-analysis to attempt to overcome these criticisms. They found that CBT was still significantly effective but with much smaller effect sizes (.34) compared to previous studies. Despite the research supporting CBT for depression in young people, the multi-site Randomised Controlled Trial Treatment for Adolescents with Depression Study (TADS) found that CBT was equivalent to a pill placebo in reducing depressive symptomatology. However they also found that the most effective treatment was anti-depressants combined with CBT, evidencing the importance of CBT in conjunction with medication in the treatment of depression in young people.

Components within CBT have also been shown to be effective in young people with depression. Townsend et al (2001) found that the problem-solving component of CBT is effective at reducing self-harm and suicidal thoughts. Similarly, the TADS found that suicidal ideation was higher in the medication only group (15%)

compared to the CBT group (6%) or combination group (8%). This suggests that CBT targets more than symptom reduction.

1.2 NICE guidelines

There are fewer specific NICE guidelines for treatment of disorders within children and adolescents than adults. Those disorders in children that do have specific NICE guidelines are OCD (NICE, 2005), PTSD (NICE, 2005), eating disorders (NICE, 2004), self-harm (NICE, 2004), depression (NICE, 2005), parent management training for conduct disorder (NICE, 2006), ASD (NICE, 2011), ADHD (NICE, 2006) and more physical disorders such as epilepsy, sedation, bedwetting and UTI's. It seems in the absence of specific guidelines, the adult guidelines are followed. For example, NICE guidelines recommend CBT for children with depression (NICE, 2005) but there are currently no specific guidelines for anxiety in children. However, NICE do recommend CBT for anxiety in adults and this is usually followed for children and adolescents (NICE, 2007).

1.3 National Service Framework

The Children's National Service Framework (NSF) is a Department of Health document outlining the standards for improving the mental health and psychological well being of children and young people (DoH, 2004). The standards are closely in line with the Every Child Matters agenda. A key NSF vision is for 'all children, young people and their families to have access to mental health care based upon the best available evidence and provided by staff with an appropriate range of skills and competencies' (p8).

The NSF emphasises the importance of CAMHS interventions using evidence-based practice. The NSF marker for good practice is 'Services ensure that children and young people receive treatment interventions which are guided by the best available evidence and which take account of their individual needs and circumstances' (p43). They state that when planning and delivering evidence based interventions, NICE guidelines should be taken into account. In several of the NICE guidelines specific to children, CBT is recommended alongside other interventions such as family therapy and child psychotherapy. The NSF states that CAMHS

professionals should be trained to deliver these approaches and that CAMHS should be commissioned to provide them. One of the key recommendations was 'nationally and locally CBT training and supervision to be developed to enable CAMHS to meet NICE guidance' (p7). With the introduction of child IAPT, this will be essential for CAMHS teams.

1.4 Competency and adherence

NICE guidelines recommend certain interventions for specific disorders (i.e. CBT or Interpersonal Therapy (IPT) for depression in adults, or CBT or family therapy for depression in children). These recommendations are based on the research conducted within clinical trials and the subsequent evidence for the efficacy of different approaches. The interventions being evaluated in clinical trials are highly manualised and represent prototypical exemplars of what would be best practice in delivering these interventions in routine clinical practice. There is much debate about the extent to which these interventions can be delivered to the same level in routine clinical practice as they are in strictly controlled RCTs. In order to achieve outcomes similar to those found in research trials, therapists in routine practice need to ensure that they have the skills and training to deliver the interventions to the same level. This requires both adherence and competence. Barber, Liese and Abrams (2003) describe adherence as the degree to which a particular treatment has been delivered in line with its intention (i.e. manualised treatment), whereas competence involves the quality of the particular treatment provided. One factor which may limit the generalisability of CBT interventions from clinical trials to routine clinical practice is the level of competence of the therapist. This has been shown to lead to better patient outcomes (Kingdom et al, 1996: Kuyken & Tsivrikos, 2009: Shaw et al, 1999; Strunk, Brotman & DeRubeis, 2010; Trepka, Rees, Shapiro, Hardy & Barkham, 2004).

The issue of competence and its measurement has been widely researched, yet no unitary construct exists. Sharpless and Barber (2009) describe competence in a more conceptual rather than specific way. They consider competence as either 1) the state or quality of being adequately or well qualified, 2) demonstrating ability,

or 3) having a legal definition. Barber et al (2007) distinguish between global and limited domain competence. They classify the former as being when 'therapists possess clinical acumen and that competence pervades their interventions. It is the sense that a therapist appropriately and independently manages a number of clinical problems and can adequately help patients realise their treatment goals' (p494). Limited domain competence refers to those skills expressed within a specific type of intervention. Despite not agreeing on the absolute definition of competence, and having several different tools to measure competence, it is more widely accepted that therapists need to have the skills and training in order to effectively deliver interventions. It is how we best measure these skills that is still up for debate.

1.4.1 CBT core competences framework

With the increasing expansion of CBT due to the evidence of its effectiveness, it is vital that therapists can competently deliver interventions. CBT is well researched and proven to be an efficacious treatment for certain disorders, however, it is less clear which components and which processes contribute towards change. What is clear is that better outcomes are associated with adherence to the CBT model and the level of competence to which it is delivered. The UK government commissioned a project to define the key competencies for effective delivery of CBT interventions as there is a clear need to outline the skills and knowledge that is needed to practice therapy in a competent manner.

In Roth and Pilling's (2007) Department of Health publication 'The competences required to deliver effective cognitive and behavioural therapy for people with depression and with anxiety disorders' they outline a CBT CORE competences framework. This framework was developed with a team of experts to compile a list of the key competences that are central to effective delivery of CBT and distinguish these from those that are peripheral or irrelevant to the effective delivery of CBT (Roth & Pilling, 2008). It was an iterative process that underwent continual peer review in order to develop a schematic model. They incorporated competences from Beck's Cognitive Therapy Rating Scale, manuals for specific disorders and

direct evidence from clinical trials. The aim of the competences list was to be both useful and practical to enable the framework to be used as a self-assessment tool. Additionally, it was intended to provide a curriculum for training, a guide for supervision, clinical governance, and a guide for commissioning and recruitment of competent therapists for a service.

This model identified the competences required to implement CBT in line with good practice. It is organised into 5 domains; generic therapeutic competences, basic CBT competences, specific CBT techniques, problem-specific techniques and metacompetences (see Figure 1). Generic competences are used in all psychological therapies and therefore are not specific to CBT (i.e. common factors of warmth and empathy). Basic CBT competences are used in both high and low intensity interventions and include skills such as the ability to structure sessions, knowledge of the CBT model and use of outcome measures. Specific CBT techniques are the core techniques needed when implementing a CBT intervention (e.g. exposure techniques, guided discovery and use of socratic questioning). Problem specific competences are the recommended intervention or manualised treatment based on models for specific disorders in both low and high intensity interventions (i.e. Clark's model for Panic Disorder or Beck's model for depression). Finally, metacompetences are the overarching competences clinicians need to implement CBT interventions, including the capacity to formulate and problem solve within therapy and an awareness of why, when and how to do or say something.

The framework aims to describe best practice in an understandable and valid manner to ensure practitioners have the key competences required to deliver CBT interventions to meet the needs of an identified population. The framework can assist therapists to monitor their level of competence to ensure CBT is delivered at a level where it will benefit its patients. It is an objective measure of best practice for effective CBT treatment rather than measuring adherence or competence per se. It can also inform supervision, individual therapist reflection on skills and direct resources towards training needs.

1.4.2 IAPT

Roth and Pilling's (2007) core competences framework was designed with IAPT in mind to ensure therapists were competent to deliver evidence-based CBT treatment for anxiety and depression. This framework would need to be adapted to monitor and assess the competences needed to work with children and adolescents due to the differences in developmental understanding and clinical context. However, as this is currently in development, this framework can still be used to provide information on the competences of therapists using CBT with children.

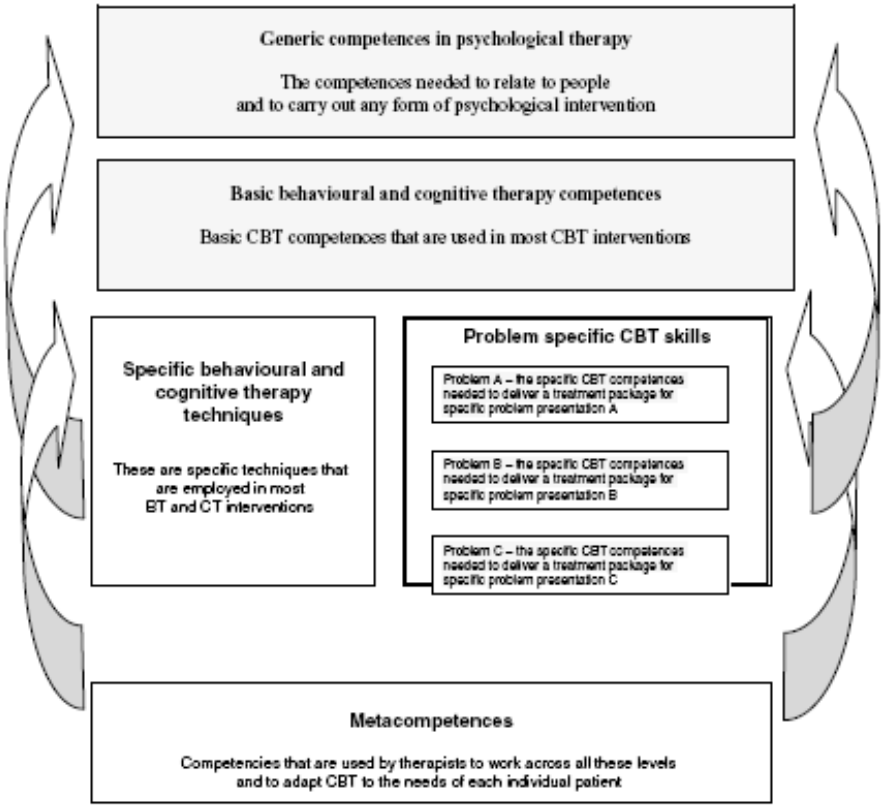


Figure 1. Outline model for CBT competences

1.4.3 Training and clinical governance

To be skilled and feel competent to deliver CBT interventions, therapists must be trained in the necessary skills. NICE guidelines state that interventions need to be delivered by people who are 'appropriately trained', however, they give no definition as to what this is. Murray and Cartwright –Hatton (2006) argue that this means that individuals need to be aware of their own level of competence, both skills and limitations, and only deliver interventions within their level of

competence. Being aware of competence levels and being able to assess this using a framework such as Roth and Pilling's allows therapists to seek appropriate supervision and training.

2 Service description

CAMHS are part of the National Health Service (NHS) and specialise in the assessment and treatment of children and adolescents with emotional, behavioural and mental health difficulties. This CAMHS service divided into 8 teams. These are:

- Children and Young People's Community Service (East)
- Children and Young People's Community Service (West)
- East Clinic Team
- West Clinic Team
- Children and Young People's Neurodevelopmental Team
- Young People's Service (LYPS)
- CAMHS Children Looked After Project (Symbol)
- CAMHS ART Service

The teams comprise of a variety of professionals including Psychiatrists, Psychologists, Family Therapists, Therapeutic Social Workers and CAMHS Practitioners. Referrals can be made to the service from GPs, teachers, health visitors, Connexions, youth services, social workers and other local professionals.

3 Aims of audit

The aim of this project was to audit the level of self-rated CBT competences throughout the various CAMHS teams within this service. This will monitor the current level of CBT skills within the service and will help to identify training and supervision needs. The audit provides an indication of the breadth and level of the CBT core competences of CAMHS workers on key elements of the framework. On an individual and team level, it was hoped that this would help to identify what has

been attained, and as a result, what areas may still need to be developed. This will aid the service in identifying training needs.

4 Method

4.1 Ethics

This audit was approved by the clinical governance department within the CAMHS CAG of the South London and Maudsley NHS Trust.

4.2 Participants

The CBT competences questionnaire was sent via email to all clinicians from the 8 teams within this CAMHS service. Participants were given the option of emailing the questionnaire back or putting it into the internal mail/researcher's pigeon hole to ensure anonymity.

4.3 Materials

This audit utilised Roth and Pilling's (2007) CBT CORE competences framework. The questionnaire used in this audit was based directly on this framework and used 4 of their 5 domains. Generic therapeutic competences were not assessed as this audit was specifically assessing CBT competences. Therefore the 4 domains of competences being assessed were; basic CBT competences, specific CBT techniques, problem-specific techniques and metacompetences.

The self-assessment tool provided within this framework asks respondents to rate their competency level as green ('I have fully developed this competence'), amber ('I have developed part of this competence') or red ('I do not have this competence'). This was replicated on the questionnaire given to clinicians.

Respondents were asked to rank what they felt their top **5 training needs** were across all of the competency areas (not each individual competency). This was used to help assess and develop training, which directly addressed what the team believed could benefit from being developed.

The questionnaire also contained open questions asking participants their view on the benefits and limitations of using a CBT approach, whether they have access to CBT supervision and what they would like to have further access to in order to develop their competency in using a CBT approach. It was hoped that respondents would provide information on whether they currently receive supervision and whether they thought this was adequate or could be improved. Specifically, it was aimed at determining whether they believed training, supervision or consultation would be beneficial.

4.4 Procedure

All clinicians within the 8 teams were emailed the questionnaire with a covering letter explaining the audit. This was sent to 39 clinicians comprising of a variety of professionals including, Psychiatrists, Psychologists, Family Therapists, Therapeutic Social Workers and CAMHS Practitioners. Clinicians were asked to either email their completed questionnaire or to put it into the internal mail/researcher's pigeon hole to ensure anonymity.

5 Results

5.1 Data analysis

The data from the questionnaire was analysed using SPSS v20. Participants were asked whether they had received CBT training and if so what training this was. On analysis, to make the results more meaningful, the participants were grouped by level of training. Those with training were divided into brief training and more substantial training. This was rated by two researchers to establish inter-rater reliability. Both researchers agreed on 100% of the allocations.

Questionnaires were sent to 39 clinicians, and 28 were received back. This is a response rate of 71.8%. From those who responded, 41% stated that they had formal CBT training of varying degrees. Only 41% stated which team they were in, therefore it was not possible to analyse the CBT skills and training needs according to team.

5.1.1 Competence ratings

Table 1 shows the average percentage of clinicians that felt 'not competent', 'partially competent' or 'fully competent' across the 4 domains measured.

	Not competent	Partially competent	Competent
Basic CBT competences	25.7%	38.5%	35.7%
Competences in problem specific techniques	43.8%	35.7%	20.4%
Competences in specific CBT techniques	38.3%	30.7%	30.9%
Metacompetences	39.2%	31.6%	29.1%

Table 1: Average ratings of competence in clinicians across all domains

5.1.1.1 Basic CBT competences

The results of the audit suggest that 25.7% of the respondents did not feel competent in basic CBT skills, whilst 38.5% felt 'partially competent' and 35.7% 'fully competent' (see Table 1). Of particular importance was that over 30% did not feel competent in the following areas: their knowledge of cognitive biases, the role of safety seeking behaviours, sharing responsibility of sessions structure and content, use of measures and self-monitoring to guide therapy and monitor outcome, developing hypotheses about a maintenance cycle and using this cycle to set targets for intervention and finally to end therapy in a planned manner and plan for long term maintenance of gains post treatment (see Table 2).

	Not	Partly	Fully
Knowledge of basic principles of CBT and rationale for treatment	3.6%	53.6%	42.9%
Knowledge of common cognitive biases relevant to CBT	42.9%	25%	32.1%
Knowledge of the role of safety-seeking behaviours	35.7%	28.6%	35.7%
Explaining and demonstrating the rationale for behavioural and for cognitive behavioural therapy	14.3%	46.4%	39.3%
Ability to agree goals for the CBT intervention	25%	32.1%	42.9%
Ability to structure sessions	25%	46.4%	28.6%
Sharing responsibility for CBT session structure and content	32.1%	35.7%	32.1%
Ability to adhere to an agreed agenda	17.9%	46.4%	35.7%
Ability to plan and to review 'practice assignments' ('homework')	17.9%	42.9%	39.3%
Using summaries and feedback to structure the session	17.9%	35.7%	46.4%
Ability to use measures and self-monitoring to guide therapy and to monitor outcome	35.7%	32.1%	32.1%
Ability to develop hypotheses about a maintenance cycle and to use the maintenance cycle to set targets for intervention	35.7%	32.1%	32.1%
Problem solving – drawing on CBT formulations	25%	50%	25%
Ability to end therapy in a planned manner & to plan for long-term maintenance of gains after treatment ends	32.1%	32.1%	35.7%
Mean	25.7%	38.5%	35.7%

Table 2: Competence rating in clinicians within the basic competences domain

5.1.1.2 Competences in problem specific techniques

From the results of the audit, it would suggest that on average 44% of the respondents did not believe they were competent in problem specific techniques within CBT, whilst 36% felt 'partially competent' and 20% 'fully competent' (see Table 1). There was a high percentage of respondents who did not feel competent in using CBT to treat specific disorders (see Table 3). Just over a third of clinicians (35.7%) did not feel competent in treating depression and just under half (45.3%) did not feel competent in treating anxiety disorders (specific phobias, social phobia, panic disorder, OCD, GAD and PTSD). Only 32.1% of clinicians treating depression and 18.5% treating anxiety disorders felt fully competent using CBT for as treatment for these disorders.

	Not	Partly	Fully
Specific phobias	42.9%	39.3%	17.9%
Social Phobias	46%	39.3%	14.3%
Panic Disorder	39.3%	39.3%	21.4%
OCD	50%	28.6%	21.4%
GAD	42.9%	35.7%	21.4%
PTSD	50%	35.7%	14.3%
Depression	35.7%	32.1%	32.1%
Mean	43.8%	35.7%	20.4%

Table 3: Competence rating in clinicians within the problem specific competences domain

5.1.1.3 Competences in specific CBT techniques

From the results of the audit, it would suggest that on average 38% of the respondents did not feel competent in specific CBT techniques, whilst 31% felt partially competent and 21% fully competent (see Table 1). Of particular note were the techniques where over 40% of respondents did not feel competent using (see Table 4). These were applied relation, activity monitoring and scheduling, guided discovery and Socratic questioning, ability to use thought records, ability to detect, examine and help clients test automatic thoughts and images and finally ability to plan and conduct behavioural experiments. These are essential techniques in CBT generally and specifically to treat the main anxiety disorders and depression.

	Not	Partly	Fully
Exposure techniques	35.7%	32.1%	32.1%
Applied Relaxation & applied tension	46.4%	17.9%	35.7%
Activity monitoring and scheduling	43%	25%	32.1%
Guided Discovery and Socratic Questioning	57.1%	21.4%	21.4%
Ability to use thought records	42.9%	25%	32.1%
Ability to identify and work with safety behaviours	39.3%	32.1%	28.6%
Ability to detect, examine and help client reality test automatic thoughts & images	42.9%	25%	32.1%
Ability to elicit key cognitions/images	39.3%	32.1%	28.6%
Ability to facilitate naming and identification of emotions	17.9%	32.1%	50%
Ability to identify and modify assumptions, attitudes and rules ("intermediate beliefs")	28.6%	50%	21.4%
Ability to identify, and help the client modify, core beliefs	22.2%	51.9%	25.9%
Ability to employ imagery techniques	39.3%	28.6%	32.1%
Ability to plan and conduct behavioural experiments	46%	25%	28.6%
Ability to develop CBT formulation and use this to develop treatment plan/ case conceptualisation	35.7%	32.1%	32.1%
Mean	38.3%	30.7%	30.9%

Table 4: Competence rating in clinicians within the specific CBT techniques competences domain

5.1.1.4 Metacompetences

From the results of the audit, it would suggest that on average 39% of the respondents did not feel competent in metacompetences, whilst 32% felt partially competent and 29% fully competent (see Table 1). The areas that clinicians felt least competent in were the capacity to select and skilfully apply the most appropriate BT & CBT method, the capacity to implement CBT in a manner consonant with its underlying philosophy, the capacity to manage obstacles to carrying out CBT and the capacity to formulate and to apply CBT models to the individual client (see Table 5).

	Not	Partly	Fully
Capacity to use clinical judgment when implementing treatment models	21.4%	25%	53.6%
Capacity to adapt interventions in response to client feedback	21.4%	25%	53.6%
Capacity to implement CBT in a manner consonant with its underlying philosophy	50%	28.6%	21.4%
Capacity to formulate and to apply CBT models to the individual client	46.4%	35.7%	17.9%
Capacity to select and skilfully to apply the most appropriate BT & CBT method	53.6%	32.1%	14.3%
Capacity to structure sessions and maintain appropriate pacing	32.1%	42.9%	25%
Capacity to manage obstacles to carrying out CBT	50%	32.1%	17.9%
Mean	39.2%	31.6%	29.1%

Table 5: Competence rating in clinicians within the metacompetences domain

5.1.2 Training levels

After looking at the results of the audit for the whole sample overall, it was felt it may be more useful to break down the results by level of training. This was considered important for exploration of beliefs about being less competent as this may be linked to a lack of training.

5.1.2.1 No training

Just over half of the sample (59%) had received no formal CBT training. Table 6 shows the average competency ratings across the four domains being measured for those clinicians who had received no formal training in CBT. Despite these clinicians not having had any formal training in CBT, over 60% still felt competent (either partially or fully) in basic CBT competences. In terms of problem specific competences, clinicians felt most competent in working with panic (50% partially or fully) and least competent in working with PTSD (18.8% partially competent). For specific CBT techniques, just under half of clinicians felt partially or fully competent with the least competent area being the use of guided discovery and socratic questioning. The area of specific CBT techniques untrained clinicians felt most competent in was the ability to facilitate naming and identification of emotions and the ability to identify and help the client modify core beliefs. Metacompetences

was an area that few clinicians felt competent in (just over 40%). Whilst approximately 70% felt partially or fully competent in their capacity to use clinical judgement when implementing treatment models and to adapt interventions in response to client feedback, less than 20% felt competent in their capacity to select and skilfully apply the most appropriate BT and CBT method.

	Not competent	Partially competent	Competent
Basic CBT competences	37.9%	48.7%	13.4%
Competences in problem specific techniques	64.3%	29.5%	6.3%
Competences in specific CBT techniques	54.9%	33.5%	11.2%
Metacompetences	58.9%	26.8%	14.3%

Table 6: Average ratings of competence in clinicians who have no formal training (across all domains)

5.1.2.2 Brief Training

Within the sample, 22% had received brief CBT training which consisted of one or two days training. Table 7 shows the average competency ratings across the four domains being measured for those clinicians who had received brief training in CBT. More than 80% of clinicians with brief CBT training felt competent (partially or fully) in basic CBT competences. The areas that clinicians seemed to feel the least competent in this area (83.3% felt partially or not competent) was the ability to develop hypotheses about a maintenance cycle and to use the maintenance cycle to set targets for intervention, problem solving by drawing on the CBT formulation and ability to end therapy in a planned manner and to plan for long-term maintenance gains after treatment ends. Within problem specific competences, 73.8% of clinicians felt competent (partially or fully), with the highest level of competence in using CBT to treat depression, followed by specific phobias and then PTSD. For competences in specific CBT techniques, 67.8% of clinicians felt competent (partially or fully). The area that clinicians felt most competent in was using exposure techniques, the ability to identify and work with safety behaviours and the ability to employ imagery techniques. The areas that clinicians felt least

competent in was using guided discovery and Socratic questioning followed by ability to use thought records, and then the ability to detect, examine and help clients reality test automatic thoughts and images. For metacompetences, 67.8% of clinicians felt competent (partially or fully). This was the area that the fewest clinicians rated as feeling fully competent (21.4%). Clinicians felt most competent in their capacity to use clinical judgment when implementing treatment models and their capacity to adapt interventions in response to client feedback. No clinicians reported feeling fully competent in the capacity to implement CBT in a manner consonant with its underlying philosophy or the capacity to formulate and to apply CBT models to the individual client.

	Not competent	Partially competent	Competent
Basic CBT competences	19%	45.2%	35.7%
Competences in problem specific techniques	26.2%	47.6%	26.2%
Competences in specific CBT techniques	32.1%	35.7%	32.1%
Metacompetences	26.2%	52.4%	21.4%

Table 7: Average ratings of competence in clinicians who have received brief training (across all domains)

5.1.2.3 Full training

Within the overall sample, 19% had received comprehensive CBT training from either a doctorate in clinical psychology or a diploma in CBT. Table 8 shows the average competency ratings across the four domains being measured for those clinicians who had received comprehensive training in CBT. All fully trained clinicians felt competent in basic CBT competences with 94.3% feeling fully competent and 5.7% partially. Within the small percentage who felt partially competent the areas that clinicians felt less competent in were explaining and demonstrating the rationale for behavioural or cognitive behavioural therapy, ability to plan and to review homework, ability to use measures and self-monitoring to guide therapy and monitor outcome and finally problem solving – drawing on CBT formulations. Within the domain of problem specific techniques, over 91.5%

felt competent (either partially or fully). Within the 8.5% that did not feel competent, this was using CBT to work with specific phobias, social phobias and panic disorder. Clinicians felt the most competent using CBT for GAD and depression (60%), followed by OCD and PTSD. Looking at specific CBT techniques, all clinicians felt competent with 21.4% feeling partially competent and 78.6% feeling fully competent in this area. The areas clinicians felt least competent was in their ability to identify and help the client modify core beliefs (60%) and the ability to identify and modify assumptions, attitudes and rules (40%). The areas that 100% of clinicians felt competent in was their ability to facilitate naming and identification of emotions and in their ability to develop CBT formulation and use this to develop treatment plan/case conceptualisation. Within the metacompetences domain, all clinicians felt competent with 28.6% feeling partially competent and 71.4% feeling fully competent. The areas that clinicians felt the least competent in were the capacity to select and skilfully apply the most appropriate BT and CBT method (60%), the capacity to structure sessions and maintain appropriate pacing (40%) and the capacity to manage obstacles to carrying out CBT (40%). The area that 100% of clinicians felt competent in was the capacity to use clinical judgement when implementing treatment models.

	Not competent	Partially competent	Competent
Basic CBT competences	0%	5.7%	94.3%
Competences in problem specific techniques	8.5%	48.6%	42.9%
Competences in specific CBT techniques	0%	21.4%	78.6%
Metacompetences	0%	28.6%	71.4%

Table 8: Average ratings of competence in clinicians who have received comprehensive training (across all domains)

5.1.3 Qualitative questions

The questionnaire had 5 open-ended questions to gain information on clinicians' views of CBT, current access to CBT supervision and what they would like access to in order to feel more competent in delivering CBT.

The first question asked the clinicians what they felt was the most valuable component of CBT when working with young people. From the 28 clinicians who returned their questionnaire, 24 responded to this question. The responses were grouped into broad themes. Firstly, the techniques that are used in CBT were felt to be valuable. For example, participants highlighted the following: “to challenge negative and stuck patterns of thinking and behaviour”, “exposure and response prevention in anxiety disorders”, “compiling a dysfunctional thought record and identifying hot thoughts” and “reality testing and behavioural experiments.” The structure of CBT was also thought to be a valuable component, with one clinician stating that they thought the most valuable component was “the structure and concretisation that the therapy promotes.” Another stated that the structure allows “clear goals and outcomes” whilst allowing for “use of creativity to engage young people.” Clinicians also felt the evidence base of CBT was a valuable component with one clinician stating “it has a good evidence base which lends itself quite well to qualitative research” and another acknowledging that “its evidence base which has proven effectiveness with particular problems”. Finally, the collaborative nature of CBT and formulating which facilitates understanding was a theme which many clinicians identified as a valuable component of CBT. For example, one clinician stated “using the model to help young people better understand their thoughts, feelings and behaviours and using formulation to identify maintenance cycles and help them to develop alternative solutions.” Others commented on it being “an easily explainable and understandable model” with “diagrams illustrating behavioural patterns and connections” and being able to “present formulation and model alongside the rationale for homework.” This collaborative nature can empower the individual and help build a strong therapeutic relationship.

The second question asked clinicians what they felt were the benefits of a CBT approach and 25 clinicians out of 28 responded. Looking at the responses, similar themes to the previous question emerged. Broadly speaking the evidence base, structure and collaborative and empowering nature of CBT were thought to be the most beneficial aspects of this approach. In terms of its evidence base, clinicians responded “there is evidence of the treatment being effective and you can evaluate

the effectiveness", "clear and measurable and it works" and "NICE recommend it." Others felt the benefits of CBT were the evidence base in relation to specific disorders. For example, several clinicians stated that CBT is "helpful with OCD, anxiety and phobias" and "can be used in a diverse range of settings with most mood disorders, children and adults." Some clinicians felt this made it "a quick fix and cheap to initiate" and "help to achieve the desired objective." Again, the structure of CBT was found to be a theme in terms of its benefits with clinicians commenting on its "structure, focus, goal driven and understandable" nature as well as being "time-limited," Finally, clinicians felt the collaborative and empowering nature of CBT was its benefit commenting how it "actively seeks to engage the client in therapy", "empowers the young person", "young people are part of planning and implementing treatments", gives them "more control over their own behaviour" and "skills for life," One clinician summarised the benefit of the empowering nature of CBT as it "helps the client to realise that the best solutions can be found inside their own brains."

The third question asked clinicians what they thought the limitations of a CBT approach were and 24 out of 28 clinicians responded. The main theme that was clear from the responses was that CBT is felt to be too simplistic at times. This theme was broken down into the reasons why its simplicity was thought to be a limitation. The first related to clinician's feeling that CBT can be too individualistic and ignore systemic factors. For example, several clinicians stated "it locates the problem within the individual…not well suited to young people whose presenting problems are an expression of the difficulties within their families", "does not address multi systemic nature of most mental health difficulties in young people", "focused on disorder and not holistic" and "tends to locate agency for change within the individual when systemic change is needed to support the intervention." The next limitation theme was in relation to CBT being too simplistic when addressing comorbidities or abuse. For example, "can be difficult to use CBT to address emotional problems with early and longstanding histories of abuse", "doesn't get to the root of the issue", "few of our cases are 'pure' anxiety disorders/depression" and "CBT formulation can sometimes be limited in

developing an understanding of the presenting problems as often cases present with complex issues". The final theme was in relation to the concept and evidence for CBT being too simplistic and more difficult in practice. For example, "young person needs to be actively engaged to make use of homework etc", "have to be highly motivated", "long term follow up studies are not as encouraging as one would hope", "gains are not always sustained", "could be a sticking plaster job", "not a panacea to all ills" and "doesn't suit everyone". Additionally, it was felt CBT can too complex for children. For example, "CBT can be a complex model for some children to understand and relies too much on verbal competency in the child" and "some young people find it hard to identify thoughts, feelings and physiological states".

The fourth question asked whether clinicians currently (or in the past) had access to supervision of any form for their CBT work and 26 out of 28 responded. The responses were divided into 5 categories: 1) those that said no, 2) those that said they had received it in the past but were not currently, 3) those who would like to receive group supervision but have not got the time to attend, 4) those receiving formal supervision in groups or individual supervision, and 5) those receiving informal supervision. For example, those unable to attend group supervision said "it falls on a meeting day", "it is at a time that I cannot do" and "due to other trainings and clinics, I'm unable to attend it". In terms of formal supervision, clinicians said they attended a mixture of peer supervision, the locally organised CBT forum and individual supervision with a CBT trained colleague. Finally, clinicians reported receiving informal supervision, for example, "from CBT trained colleagues to help me formulate a kid from another perspective", "individual advice/support for specific cases from CBT trained colleague" and "informal discussions".

Finally clinicians were asked what specifically they would like to have further access to in order to develop their CBT competency and 25 clinicians out of 28 responded. The majority said they would like training both on basic CBT and more specific or advanced skills. For example, "short CBT course for low intensity intervention", "some basic training which would allow me to use CBT with supervision" and "some basic training in ideas and techniques that could be used for young people where

CBT is recognised as the best intervention". For more specific supervision, clinicians said "specialist training to think about specific areas particularly as these treatments are offered within the clinic and not seen by N&S and further training to think about formulation and treatment of complex cases or treatment resistant cases" and "specific disorder training (i.e. health anxiety, physical health conditions, phobias, working with OCD". Others suggested "teaching sessions on a CBT theme e.g. CBT for social anxiety, theory, practice, case study etc." and another said "a series of CBT workshops as one day training would not be adequate".

Clinicians also asked for more access to consultation and group discussions as well as specialist CBT supervision on specific disorders or more complex cases. Finally, clinicians requested additional training in other evidence-based therapies such as EMDR and schema focused therapy, and for their practice to be observed as part of supervision.

5.1.4 Training needs identified

Respondents were asked to identify what they believed were there top 5 training needs from the 42 competences specified. Only 8 individuals (28%) responded to this part of the questionnaire. Those with no previous CBT training (*n*=4) felt they needed training in all areas of competence. Those that had either brief (*n*=2) or full CBT training (*n*=2) prioritised their training needs in the following order; problem specific techniques, use of specific techniques, metacompetences and finally on some of the areas within basic CBT competences.

6 Discussion

6.1 Implementation of CBT interventions

It is unclear from the audit how many clinicians see CBT as their dominant approach and therefore how often CBT is implemented and by how many of the taskforce. With the introduction of child IAPT and the NICE guidelines recommending CBT (amongst other approaches), this would be important to have asked. It would seem that regardless of whether clinicians use CBT as their primary therapeutic model or have received formal training, many see the benefits of this approach and how

valuable it can be. Among those stated was its structure and techniques which were felt to enhance collaboration, understanding and empowerment of the individual. Another valuable component of CBT was felt to be its strong evidence-base, especially in relation to specific disorders. Alongside the benefits and valuable aspects of CBT, clinicians felt that CBT can sometimes be too simplistic and ignore the systemic factors or comorbidity and complexity of many disorders. It may be that for some disorders, CBT would not be the treatment of choice. This is reflected in the NICE guidelines which recommend other forms of intervention (i.e. medication for severe depression and family therapy for eating disorders). However, CBT can be used for more complex cases and parents and family can be involved to take a more systemic approach to the treatment of certain conditions (i.e. parental involvement in anxiety or parent management training in conduct disorder).

6.2 Self-assessed competence

This audit provided clinicians with a self-assessment tool to rate their feelings of competency within the different domains of delivering the CBT model. It was clear from the audit that many clinicians (especially those with less training) felt they lacked competence across different areas of delivering CBT. There is clear need for targeted training and additional supervision/consultation. Brotman, Strunk and DeRubeis (in prep) found that better outcomes were associated with techniques within CBT that set out the basic structure of the approach (e.g. setting an agenda, self monitoring tasks, homework, giving specific examples of cognitions and examining the evidence for these beliefs). From the results of this audit, it can be seen that some clinicians do not believe they are competent in these basic skills. For example, in the overall sample between 17.9% and 42.9% did not feel competent in these different CBT techniques, however this was limited to those with either brief training or none at all. Therefore, this would be a definite training target for this group of clinicians if they were intending to use CBT.

6.3 Implications for Child IAPT

The results from the audit suggest that only 41% of those surveyed have any CBT training. However this obviously only includes those that responded to the audit. It is assumed that those without training are not delivering CBT. With the introduction of child IAPT, CBT will be the treatment of choice for anxiety and depression. With the low numbers of trained CBT clinicians and low ratings of competence within those that have received previous training, this could have implications for service provision. It will be important for the team to offer training, adequate supervision/consultancy and continue to monitor competency levels among those offering CBT interventions to ensure adequate IAPT provision.

6.4 Training

The results of this audit indicate that there is a training need in order for clinicians to feel more competent in their implementation of CBT as a therapeutic intervention. Clinicians themselves asked for more training. Some asked for basic CBT training to enable them to offer CBT interventions. Others requested more specific CBT training in areas where they recognised they needed to develop or with particular disorders in which they felt less competent.

It is possible that different training is needed depending on the clinicians' previous training and current feelings of competence. For example, those with no previous training would need more intensive training of a longer duration covering CBT from the basics onwards. Those with previous brief training may need specific training in the areas that they feel they lack competence in to bring them up to the level of competence of those with full CBT training. Those who have comprehensive previous training may need more specific training, such as on specific disorders or using specific techniques. However, it may be that this could be addressed in supervision or within a CBT group. Metacompetences are difficult to teach but clinicians at all levels of training and competence will develop these skills with experience and through supervision.

One crucial question that was omitted from the audit was to ask the clinicians their dominant approach and whether they currently use CBT or would like to be able to

offer CBT intervention. Without this information it is difficult to know how many clinicians are currently offering an intervention that they do no feel competent in delivering or how many of those that are not currently feeling competent would like to receive training to be able to deliver CBT interventions.

6.5 Supervision

The responses to the audit suggested that many clinicians felt they would like to have more access to supervision and consultation in order to develop their CBT competences. Although already receiving individual supervision, clinicians felt that they would like to be able to access group supervision but often could not attend the existing groups due to clinical and administrative pressures. It is also feasible that some clinicians were not aware of the options that were available to them or the level of CBT needed to attend the current groups.

6.6 Methodological considerations

The CBT competences framework that this audit was based on was outlined originally for training IAPT clinicians working with adults. As it was not developed specifically for clinicians working with children it may not reflect the breadth of skills needed for this client group. Since this audit was conducted, a CAMHS specific competences framework has been developed for generic competences needed for working with children and adolescents which is not specific to CBT. This may be more applicable for this team, however, the purpose of this audit was to specifically audit the CBT competences.

Although briefly piloting the questionnaire, it would seem that certain questions were not clear or perhaps the layout of the questionnaire meant that clinicians missed questions. For example, very few clinicians put which team they were in which restricted the analysis that could be done by team and the specific training needs of certain teams. On reflection, it was also felt that the question on training needs may not have been clear enough as only 28% responded to this question and all of these clinicians appear to have interpreted the question in a different way making the answers less meaningful. Additionally, although most clinicians suggested what training may be useful, clinicians were not asked if they wanted

further training or to attend training and workshops if this was offered. This would be important to know when designing and implementing training courses.

There were also additional questions that would have been useful to have asked, such as what the clinicians' dominant approach was, how often they used CBT and whether they would like to use CBT. It is not clear from the current audit how many clinicians are actually currently using CBT and whether those that are not would like to be. It is possible that many of the clinicians that responded are actually trained in another approach and CBT is not their preferred therapeutic approach. This is important to know in terms of interpreting the level of competence among clinicians as they may feel less competent as it is not their preferred approach and they have no intention of offering a CBT intervention. This would be less worrying than those clinicians that do not feel competent but are actually offering CBT interventions on a more regular basis.

Finally, it is important to note that for some teams, CBT may be not the main therapeutic approach or it may be adapted and modified to suit the patients' needs. For example, from a learning disability perspective within the Neurodevelopmental Team, a clinician's skills at adapting and using CBT may not be fully credited or evaluated using this competency framework.

7 Recommendations

From the data collected in this audit it has shown the current level of competence felt by clinicians who responded. It also highlights what they feel they could benefit from in terms of improving their level of competency. Due to the introduction of child IAPT, it is important that clinicians feel competent and can offer CBT interventions for anxiety and depression disorders. Following on from this audit, it is recommended that the CAMHS service could:

- Offer CBT training to CAMHS clinicians. This may need to be aimed at different levels of competency for example ranging from basic CBT skills to those wanting to begin offering CBT interventions under supervision to

more specific technique or disorder focused to those clinicians requiring development or refreshing of CBT skills.

- Offer workshops on specific disorders to allow those clinicians already trained to refresh skills or develop new skills in areas they feel less competent. This would be particularly relevant to those disorders where NICE guidelines have highlighted the value of using a CBT intervention.

- Offer formulation workshops to practice skills especially in relation to complex cases.

- Encourage more experienced clinicians to offer informal supervision to less experienced clinicians. This may be encouraged through case examples and workshops which demonstrate how cases were assessed, formulated and the implementation of the intervention.

- Offer group supervision for all levels of CBT competence at a time that clinicians could make. This may require it to be protected time or have the group at a different time each week/month to allow different clinicians to attend.

- Encourage more experienced clinicians to offer consultation and supervision for more complex cases.

- Encourage clinicians to regularly use the competency framework as a self-assessment tool to monitor their feelings of competence and training needs.

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9 Appendix

9.1 No training

9.1.1 Basic CBT Competences

	Not	Partly	Fully
Knowledge of basic principles of CBT and rationale for treatment	6.25%	75%	18.8%
Knowledge of common cognitive biases relevant to CBT	68.8%	25%	6.3%
Knowledge of the role of safety-seeking behaviours	56.3%	37.5%	6.3%
Explaining and demonstrating the rationale for behavioural and for cognitive behavioural therapy	18.8%	62.5%	18.8%
Ability to agree goals for the CBT intervention	31.3%	50%	18.8%
Ability to structure sessions	37.5%	56.3%	6.3%
Sharing responsibility for CBT session structure and content	50%	37.5%	12.5%
Ability to adhere to an agreed agenda	31.3%	56.3%	12.5%
Ability to plan and to review 'practice assignments' ('homework')	25%	56.3%	18.8%
Using summaries and feedback to structure the session	25%	50%	25%
Ability to use measures and self-monitoring to guide therapy and to monitor outcome	50%	43.8%	6.3%
Ability to develop hypotheses about a maintenance cycle and to use the maintenance cycle to set targets for intervention	50%	37.5%	12.5%
Problem solving – drawing on CBT formulations	31.3%	62.5%	6.3%
Ability to end therapy in a planned manner & to plan for long-term maintenance of gains after treatment ends	50%	31.3%	18.8%
Mean	37.9%	48.7%	13.4%

9.1.2 Problem specific techniques

	Not	Partly	Fully
Specific phobias	62.5%	37.5%	0%
Social Phobias	62.5%	31.3%	6.3%
Panic Disorder	50%	43.8%	6.3%
OCD	75%	12.5%	12.5%
GAD	62.5%	31.3%	6.3%
PTSD	81.3%	18.8%	0%
Depression	56.3%	31.3%	12.5%
Mean	64.3%	29.5%	6.3%

9.1.3 Specific CBT techniques

	Not	Partly	Fully
Exposure techniques	56.3%	31.3%	12.5%
Applied Relaxation & applied tension	68.8%	18.8%	12.5%
Activity monitoring and scheduling	62.5%	25%	12.5%
Guided Discovery and Socratic Questioning	75%	25%	0%
Ability to use thought records	62.5%	18.8%	18.8%
Ability to identify and work with safety behaviours	62.5%	25%	12.5%
Ability to detect, examine and help client reality test automatic thoughts & images	62.5%	18.8%	18.8%
Ability to elicit key cognitions/images	56.3%	37.5%	6.3%
Ability to facilitate naming and identification of emotions	18.8%	56.3%	25%
Ability to identify and modify assumptions, attitudes and rules ("intermediate beliefs")	37.5%	62.5%	0%
Ability to identify, and help the client modify, core beliefs	25%	56.3%	12.5%
Ability to employ imagery techniques	62.5%	25%	12.5%
Ability to plan and conduct behavioural experiments	68.8%	25%	6.3%
Ability to develop CBT formulation and use this to develop treatment plan/ case conceptualisation	50%	43.8%	6.3%
Mean	54.9%	33.5%	11.2%

9.1.4 Metacompetences

	Not	Partly	Fully
Capacity to use clinical judgment when implementing treatment models	31.3%	31.3%	37.5%
Capacity to adapt interventions in response to client feedback	31.3%	25%	43.8%
Capacity to implement CBT in a manner consonant with its underlying philosophy	75%	18.8%	6.3%
Capacity to formulate and to apply CBT models to the individual client	68.8%	31.3%	0%
Capacity to select and skilfully to apply the most appropriate BT & CBT method	81.3%	18.8%	0%
Capacity to structure sessions and maintain appropriate pacing	50%	37.5%	12.5%
Capacity to manage obstacles to carrying out CBT	75%	25%	0%
Mean	58.9%	26.8%	14.3%

9.2 Brief Training

9.2.1 Basic CBT Competences

	Not	Partly	Fully
Knowledge of basic principles of CBT and rationale for treatment	0%	50%	50%
Knowledge of common cognitive biases relevant to CBT	16.7%	50%	33.3%
Knowledge of the role of safety-seeking behaviours	16.7%	33.3%	50%
Explaining and demonstrating the rationale for behavioural and for cognitive behavioural therapy	16.7%	33.3%	50%
Ability to agree goals for the CBT intervention	33.3%	16.7%	50%
Ability to structure sessions	16.7%	66.7%	16.7%
Sharing responsibility for CBT session structure and content	16.7%	66.7%	16.7%
Ability to adhere to an agreed agenda	0%	66.7%	33.3%
Ability to plan and to review 'practice assignments' ('homework')	16.7%	33.3%	50%
Using summaries and feedback to structure the session	16.7%	33.3%	50%
Ability to use measures and self-monitoring to guide therapy and to monitor outcome	33.3%	16.7%	50%
Ability to develop hypotheses about a maintenance cycle and to use the maintenance cycle to set targets for intervention	33.3%	50%	16.7%
Problem solving – drawing on CBT formulations	33.3%	50%	16.7%
Ability to end therapy in a planned manner & to plan for long-term maintenance of gains after treatment ends	16.7%	66.7%	16.7%
Mean	19%	45.2%	35.7%

9.2.2 Problem specific techniques

	Not	Partly	Fully
Specific phobias	16.7%	50%	33.3%
Social Phobias	33.3%	50%	16.7%
Panic Disorder	33.3%	33.3%	33.3%
OCD	33.3%	50%	16.7%
GAD	33.3%	50%	16.7%
PTSD	16.7%	66.7%	16.7%
Depression	16.7%	33.3%	50%
Mean	26.2%	47.6%	26.2%

9.2.3 Specific CBT techniques

	Not	Partly	Fully
Exposure techniques	16.7%	50%	33.3%
Applied Relaxation & applied tension	33.3%	16.7%	50%
Activity monitoring and scheduling	33.3%	33.3%	33.3%
Guided Discovery and Socratic Questioning	66.7%	16.7%	16.7%
Ability to use thought records	33.3%	50%	16.7%
Ability to identify and work with safety behaviours	16.7%	66.7%	16.7%
Ability to detect, examine and help client reality test automatic thoughts & images	33.3%	50%	16.7%
Ability to elicit key cognitions/images	33.3%	33.3%	33.3%
Ability to facilitate naming and identification of emotions	33.3%	0%	66.7%
Ability to identify and modify assumptions, attitudes and rules ("intermediate beliefs")	33.3%	33.3%	33.3%
Ability to identify, and help the client modify, core beliefs	33.3%	33.3%	33.3%
Ability to employ imagery techniques	16.7%	50%	33.3%
Ability to plan and conduct behavioural experiments	33.3%	33.3%	33.3%
Ability to develop CBT formulation and use this to develop treatment plan/ case conceptualisation	33.3%	33.3%	33.3%
Mean	32.1%	35.7%	32.1%

9.2.4 Metacompetences

	Not	Partly	Fully
Capacity to use clinical judgment when implementing treatment models	16.7%	33.3%	50%
Capacity to adapt interventions in response to client feedback	16.7%	33.3%	50%
Capacity to implement CBT in a manner consonant with its underlying philosophy	33.3%	66.7%	0%
Capacity to formulate & apply CBT models to the individual client	33.3%	66.7%	0%
Capacity to select and skilfully to apply the most appropriate BT & CBT method	33.3%	50%	16.7%
Capacity to structure sessions and maintain appropriate pacing	16.7%	66.7%	16.7%
Capacity to manage obstacles to carrying out CBT	33.3%	50%	16.7%
Mean	26.2%	52.4%	21.4%

9.3 Full training

9.3.1 Basic CBT Competences

	Not	Partly	Fully
Knowledge of basic principles of CBT and rationale for treatment	0%	0%	100%
Knowledge of common cognitive biases relevant to CBT	0%	0%	100%
Knowledge of the role of safety-seeking behaviours	0%	0%	100%
Explaining and demonstrating the rationale for behavioural and for cognitive behavioural therapy	0%	20%	80%
Ability to agree goals for the CBT intervention	0%	0%	100%
Ability to structure sessions	0%	0%	100%
Sharing responsibility for CBT session structure and content	0%	0%	100%
Ability to adhere to an agreed agenda	0%	0%	100%
Ability to plan and to review 'practice assignments' ('homework')	0%	20%	80%
Using summaries and feedback to structure the session	0%	0%	100%
Ability to use measures and self-monitoring to guide therapy and to monitor outcome	0%	20%	80%
Ability to develop hypotheses about a maintenance cycle and to use the maintenance cycle to set targets for intervention	0%	0%	100%
Problem solving – drawing on CBT formulations	0%	20%	80%
Ability to end therapy in a planned manner & to plan for long-term maintenance of gains after treatment ends	0%	0%	100%
Mean	0%	5.7%	94.3%

9.3.2 Problem specific techniques

	Not	Partly	Fully
Specific phobias	20%	40%	40%
Social Phobias	20%	60%	20%
Panic Disorder	20%	40%	40%
OCD	0%	60%	40%
GAD	0%	40%	60%
PTSD	0%	60%	40%
Depression	0%	40%	60%
Mean	8.6%	48.6%	42.9%

9.3.3 Specific CBT techniques

	Not	Partly	Fully
Exposure techniques	0%	20%	80%
Applied Relaxation & applied tension	0%	20%	80%
Activity monitoring and scheduling	0%	20%	80%
Guided Discovery and Socratic Questioning	0%	20%	80%
Ability to use thought records	0%	20%	80%
Ability to identify and work with safety behaviours	0%	20%	80%
Ability to detect, examine and help client reality test automatic thoughts & images	0%	20%	80%
Ability to elicit key cognitions/images	0%	20%	80%
Ability to facilitate naming and identification of emotions	0%	0%	100%
Ability to identify and modify assumptions, attitudes and rules ("intermediate beliefs")	0%	40%	60%
Ability to identify, and help the client modify, core beliefs	0%	60%	40%
Ability to employ imagery techniques	0%	20%	80%
Ability to plan and conduct behavioural experiments	0%	20%	80%
Ability to develop CBT formulation and use this to develop treatment plan/ case conceptualisation	0%	0%	100%
Mean	0%	21.4%	78.6%

9.3.4 Metacompetences

	Not	Partly	Fully
Capacity to use clinical judgment when implementing treatment models	0%	0%	100%
Capacity to adapt interventions in response to client feedback	0%	20%	80%
Capacity to implement CBT in a manner consonant with its underlying philosophy	0%	20%	80%
Capacity to formulate & apply CBT models to the individual client	0%	20%	80%
Capacity to select & skilfully apply the most appropriate BT & CBT method	0%	60%	40%
Capacity to structure sessions and maintain appropriate pacing	0%	40%	60%
Capacity to manage obstacles to carrying out CBT	0%	40%	60%
Mean	0%	28.6%	71.4%